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Efficiency in Labor for the Heating Industry

How Scientific Management of Shops and Proper Analysis of the Worker May Increase Efficiency of the Labor Element Thirty to Fifty Per Cent.

At a recent annual meeting of the American Society of Heating and Ventilating Engineers, the question of efficiency in labor by ordinary shop methods, and the application of scientific management to the labor element of the industry was brought to the attention of the organization members by Norman A. Hill of New York. The discussion was not included in the program, but became one of the most interesting topics of the meeting immediately after Mr. Hill had read a paper on the "Efficiency of Labor in the Heating Industry". The general idea of the application of scientific management to the heating industry as set forth by Mr. Hill, brings a logical conclusion that the subject discussed was fully worthy of the attention of all heating engineers or contractors. Mr. Hill spoke as follows:

"In connection with this work, the first item for the consulting engineer in the heating industry to consider is the plan of business conduct. After perfecting a plan for what we will consider is a corporation, it is necessary to perfect an organization consisting of two radically different forces, namely, the line and staff. Under the head of "Line" may be mentioned the superintendent; under him the foreman and steam fitters in charge. Under the staff organization for a contractor or engineer, we find the executive officers, followed by the subordinates: the sales or contract department, the accounting and cost department, and the purchasing of material department.

Under "staff analysis" we find the following conditions: in either a contracting or engineering business the men in control possess the executive positions and, therefore, control the policy of the organization and its matters of routine, etc. It is up to their best sense of judgment to conduct the business as they see fit.

"It is not the purpose of these few remarks on efficiency as applied to the heating industry to comment on the conduct of the organization of either heating engineers or contractors.

"Referring to the topic under discussion as a "line" proposition, particularly for the contractor, an analysis of the worker may be outlined as follows:

"1. Men. The nationality of the worker must be taken into consideration. If he is native-born, the problem of handling him under scientific management is usually simple. If he be foreign-born, the problem has certain complications. In any case, the habits of the worker must be considered and his industry, skill, temperament, character and sobriety. In case he is a member of a local labor union, under any plan of scientific management, he must be handled with tact and discretion.

2. As to the machine. It must, in the first place, be suitable for the work for which it is intended. Provision must be made for proper care of the machine. Furthermore, under scientific management, instructions must be furnished for the workmen, standardizing the work which they must do upon the machine.

3. In regard to materials. The following points must be taken into consideration; the kind and quality of the material purchased, its price to the engineer or contractor, the cost of handling said material, and its installation cost on the job.

4. We must next consider the conditions and methods under which the installation of the job is conducted, whether by a consulting engineer under his direct supervision or by a contractor at a fixed price. Under this heading we have several sub-divisions to consider, in the following order: In the case of installation (being either in the charge of a contracting or consulting engineer) a preliminary plan should be made subject to the approval and acceptance of the owner and his architect. Certain alterations are reasonably certain to be necessary in this plan, subject to

his (the owner's) approval. Then, in the case of a heating contractor bidding on his own specifications, a definite description should be made of all the work intended to be done, and upon the drawings should be clearly indicated the method of installing this work. Having in hand a clearly-defined plan and specifications covering the installation of the work, certain elements of functional discipline should be made plain to the contractors' employees, based absolutely upon the square deal.

"The next problem for the contractor is that of traffic, the moving of the material which must be installed in connection with the heating contract. In this connection, I may state that it has been our experience in the last eight years that it is advisable to cut the pipe to dimension in the shop and, under no circumstances is it necessary to cut pipe over 2 in. in size on the job.

"In this connection, the thought enters of standardizing the functions of a competent mechanic for steam fitting in the shop. Provided the architects' drawings are reasonably correct, there is no reason why all the large piping for either a steam or hot water job should not be cut and threaded, ready for installation, in the shop. It would seem, therefore, that the largest opportunity for an increase in personal efficiency of the worker is in the shop of the steam fitter, with competent instructions and accurate measurements taken off the architects' plans and checked up on the job.

"In connection with the instruction of the mechanic or steam fitter, certain conditions necessary to the satisfactory operation of an efficiency plan are necessary. In the first place, adequate lighting must be provided in the shop, a sufficient supply of fresh air at a proper temperature is also necessary and, lastly, but not the least important thing, an adequate reward for the worker for his increased efficiency.

"Now, as to efficiency and a wage plan, it is absolutely essential that a standard be established in each shop and for each field job; that is to say, work on the contract where it is to be installed. This can only be done after careful "time studies" are made during a period of three to four months and a fair analysis of the results have been tabulated.

"As to heating contractors, our experience has been that they really know little or nothing as to the actual cost to them of contract work. They seem to ignore the following facts: Four principal constituents must be considered in any cost analysis of contract work; first, the material used; second, labor used; third, the equipment used; fourth, indirect expense. This last item includes the expense in the office, shop, on the job and "overhead." The last item of expense is generally ignored in making up an estimate to bid on contract work.

"In conclusion, I would suggest that the members of this society give some thought to the application of the principles of scientific management to the heating trade. While the experience of our office does not include efficiency service for contractors in the heating business, we believe there is a possibility of an increase in efficiency for the labor element in the heating industry of from 30% to 50%, provided, that the principles of efficiency engineering are observed.

"It may not be amiss to say that from observations made in the past eight years, we have found that the waste effort in steam fitting labor, owing to the lack of advance plan, has been from 50% to 60%, and that, under normal conditions, even with union labor, the efficiency of workmen may be easily increased."

MAINE MASTER PLUMBERS' MIDWINTER MEETING.

The midwinter meeting of the Maine State Association of Master Plumbers was held in Elks Hall, Waterville, Me., on Monday, February 19th, and was attended by nearly one hundred members and their guests. In the morning there was a business meeting presided over by President E. W. Goss, of Lewiston, and at which W. G. Titus, of the Trenton Potteries Co., of Trenton, N. J., was a speaker. Mr. Titus spoke on the "Manufacture of Earthenware for Sanitary Purposes." Following this several matters of interest to the organization were discussed but the nature of the business transacted was not announced.

At one o'clock the company sat down at the banquet table and for nearly two hours the plumbers regaled themselves with good things to eat. At the close the semi-annual reports of the officers and committees were heard and there were brief addresses by several guests.

Among those who were present at the dinner were: O. G. Springfield, Gideon Picher, John Fardy, R. W. Hanson, Ralph Mairs, Waterville; C. T. Dolliver, E. Fradet, E. W. Goss, J. H. Chase, T. W. Kerrigan, Lewiston; C. M. Taber, E. S. Reed, W. H. Davis, Augusta; C. H. Babb, C. E. Fairbanks, Bangor; F. A. Davis, B. J. Harmon, C. Madson, Portland; H. A. Young, Eldreth Arnold, Auburn; G. W. Toppan, Fairfield; Patrick Mahoney, Lewiston; G. E. Luce, Augusta; F. M. Witham, Guilford; J. F. Kelley, G. E. Reed, Gardiner; A. P. Goodhue, Belfast; G. A. Norwood, Saco.

Minister Comforted By Swearing.

A certain minister, noted for his piety, recently made his first trip across the Atlantic. When the ship reached mid-ocean, a terrific storm arose, which greatly alarmed the minister.

"You need have not fear," said the captain, "as long as you hear those sailors gambling and swearing there is no danger."

About an hour after his conversation with the captain, and while the storm still raged, the minister, upon looking at the sailors again, raised his arms heavenward and exclaimed:

"Thank God! they're still swearing!"—Orpheum Joke Book.

Air-Conditioning Apparatus—Principles Governing Its Application and Operation

By Willis H. Carrier, Buffalo, N. Y., Associate Member of A. S. M. E., and Frank L. Busey M. E., Buffalo, N. Y.

Air conditioning is a term which may be generally applied to the positive production and control of desired atmospheric conditions within an enclosure, with respect to moisture, temperature and purity. Its particular concern is the regulation of humidity.

It is the purpose of this paper to describe the apparatus employed and to submit comprehensive data relating to its practical application and operation. While much of this material pertains to humidifying and humidity control, some important original data are given on heat transmission by convection, which is an important factor in many air-conditioning processes. Among these may be mentioned the heating of air by passing over steam coils; the simultaneous heating and cooling of air, as in a heat interchanger as employed in dehumidifying; and the dehumidifying and cooling of air with surface condensers. Upon these data as a basis a new theory of heat transmission by convection is established. A rational formula is derived embracing both the effect of velocity and temperature difference with a correction for variation of air density in the surface film.

Air-conditioning apparatus for controlling the humidity of air may be broadly classified, according to use, into

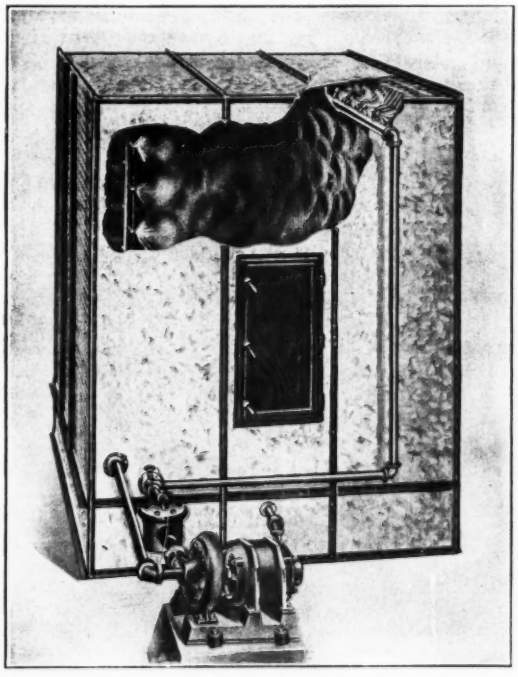


Fig. 1. Air Washer.

humidifiers proper, which add moisture to the air in required amounts; and dehumidifiers, which remove a variable quantity of moisture from the air to reduce it to the required standard. The relative humidity of air may also be altered, and in a measure regulated simply by changing its temperature without affecting its moisture contents.

Types of Humidifiers.

Humidifiers may be classified into the spray and evaporative types, and the latter being divided again into di-

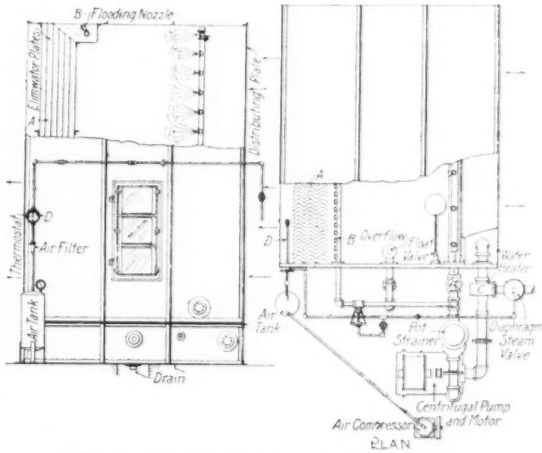


Fig. 2. Air Washer with Humidity Control.

rect and indirect. The humidity of the air may also be increased by the direct introduction of steam into the air supply or into the room. Since the total heat of the vapor at atmospheric temperature is somewhat less than the total heat at steam temperature, this raises the temperature of the air perceptibly and is therefore intolerable in the majority of cases. Added objections to the direct use of steam are that it frequently gives a noticeable odor and that it is difficult to regulate. Its use is of so little engineering interest or value that it need not here be considered.

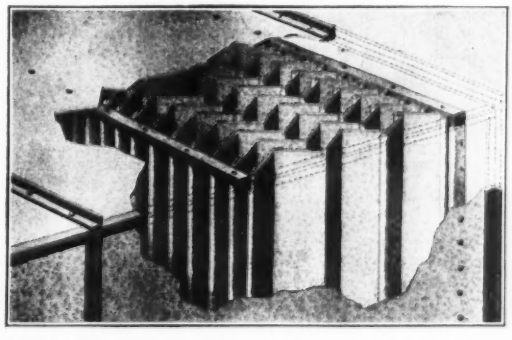


Fig. 3. Detail of Eliminator for Removing Free Moisture.

The spray and evaporative types of humidifiers have a distinct value aside from humidifying in their possession of a cooling effect which is in direct proportion to their moistening effect. The direct spray type of humidifier is distinguished from the evaporative type in

that it introduces a finely divided or atomized spray directly into the room in constant volume, while the evaporative type introduces only the water vapor. There is also a mixed type which discharges both moist air and free moisture into the room.

In what may be termed the indirect evaporative humidifier the air is partly or entirely taken from the outside air, will maintain an absolutely uniform relative humidity, other conditions remaining constant.

Since the indirect evaporative type is capable of the greatest development and widest application, and therefore is of greatest engineering interest, this paper will be devoted largely to the theory of operation of this system and methods of its application.

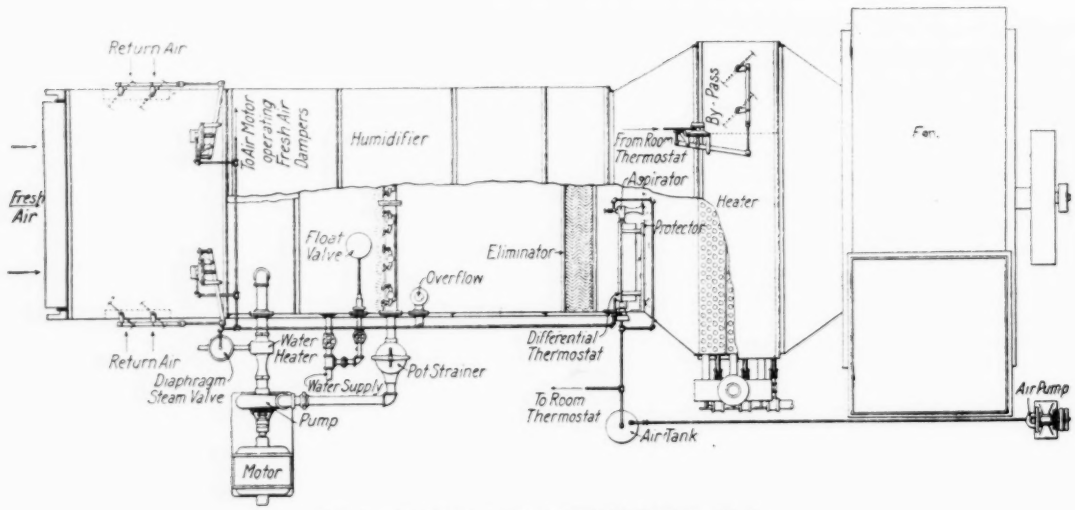


Fig. 4. Air Washer with Humidity Control.—Plan.

and is humidified and conditioned before it is introduced into the room. In the direct evaporative type the water vapor passes directly into the air of the room. The indirect system of air conditioning is also termed the central system.

A disadvantage of the direct spray type is that it always introduces a fixed quantity of moisture regardless of the needs or condition of the room until it is closed off by hand, or through a separate automatic control. In the evaporative type, on the contrary, there is an inherent self-regulating feature owing to the fact that the rate of evaporation is in direct proportion to the moisture deficit in the air. This is especially true in the indirect evaporative type, which, with all outside

Figs. 1 and 2 show the type of air purifier and humidifier adapted for use in the ventilation of auditoriums, offices and public buildings. Its primary object is the removal of impurities from the air, but combined with this is the very important function of regulation of the humidity, when below the minimum standard. When the humidity is above the required minimum standard

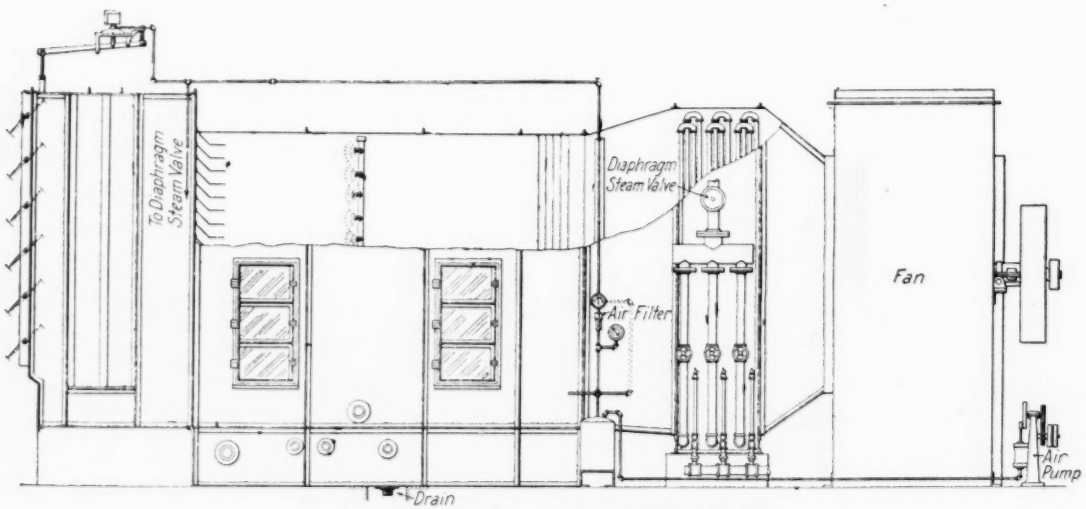


Fig. 5. Air Washer with Humidity Control.—Elevation.

it is designed to wash the air without objectional increase in its moisture contents. The essential features of this type of apparatus are:

a. A distributing plate for the purpose of reducing eddies and distributing the air uniformly over the area of the washer.

b. A system of atomizing sprays so arranged as to fill

the air completely with water particles uniformly distributed over the chamber area.

c. A centrifugal pump for maintaining the proper pressure on the spray nozzles.

d. A settling chamber provided with proper strainers for the removal of dirt from the spray water.

e. An eliminator, *A*, proper construction and ample

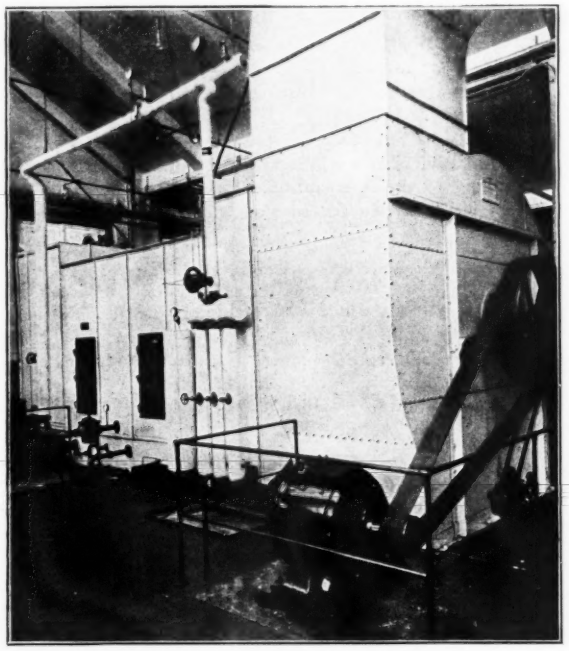


Fig. 6. General View of Humidifier.

surface for washing the air by impact and centrifugal force and for the removal of all free moisture (Fig. 3).

f. Flooding nozzles, *B*, to distribute an additional amount of water on the eliminators to increase the amount of available wetted surface, to flush the elimina-

Fig. 7. Humidifier Showing Sprays in Operation.

tors and to provide a means of washing the air without greatly affecting the humidity.

g. Automatic water heater, *C*, for supplying heat and moisture to the air through the water spray. This may be either of the closed type or of the open, ejector type.

h. Dewpoint thermostat at *D*, subject to the temperature of saturation and connected to motor valves controlling the supply of heat to the spray water.

Air is drawn through this humidifier by means of a centrifugal fan at a velocity of about 500 ft. per minute. The temperature of the air is raised immediately in the humidifier from any outdoor temperature to that necessary to hold the desired amount of moisture, ordinarily to about 40 deg. fahr.

The indirect humidifier designed for industrial application is shown in Figs. 4 and 5. This is intended primarily to deliver completely saturated air, even when the saturation temperature is above the minimum point. This condition of saturation and the cooling effect are of primary importance; the cleaning effect being usually of secondary consideration. The industrial humidifiers differ from the public building air washer in the following particulars (Figs. 6 and 7):

a. The centrifugal atomizing sprays are more numerous, and operate at higher pressure to give a more finely divided mist, and discharge in the opposite direction to the air flow.

b. The distributing plate is replaced by a diffuser composed of horizontal plates which serve also as eliminators to prevent water from being carried outward against the air current.

c. The humidifying chamber is longer in order to give greater opportunity for saturation.

d. The eliminator is not as deep and is not provided with flooding nozzles.

(To be Continued.)

GOVERNMENT CONTRACTS TO BE AWARDED.

Supervising Architect James Knox Taylor, Treasury Department, Washington, D. C., will receive sealed proposals as follows:

Until 3 P. M. on April 2nd, 1912, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring and interior lighting fixtures) of the United States Post Office at Mattoon, Illinois. The building has a ground area of approximately 6,000 square feet; one story, basement and mezzanine; fireproof construction, except roof; the exterior is faced with granite and stone, and the roof is of tile and tin.

Until 3 P. M. on April 4th, 1912, for the construction complete (including plumbing, gas piping, heating apparatus, electric conduits and wiring, and interior lighting fixtures), of the United States post office at Steelton, Pa. The building is to be one story and basement with a ground area of approximately 4,700 square feet, fireproof first floor, stone facing, and tin roof.

Until 3 P. M. on April 8th, 1912, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring, and interior lighting fixtures) of the United States post office at Westerly, R. I. The building is to be approximately 4,400 square feet in ground area, one story and basement, with granite facing to first floor and marble facing above, tiel and copper roof; the building is to be fireproof throughout, except the roof.

All proposals should be in accordance with drawings and specifications, copies of which may be obtained from the custodians of the above sites or from the office of the Supervising Architect at Washington, D. C.

Glen Cove, N. Y.—Wm. McCahill has been elected president of the Nassau County Master Plumbers' Association, which was recently organized at a meeting held in Minneola. The secretary of the new local is Mr. McKenney, of Westbury.

Anniversary Celebrations

Reports of Banquets by Master Plumbers' Local Associations Honoring Thirtieth Anniversary of National Association

Jersey City Master Plumbers' Celebration.

On Monday evening, February 19th, the Jersey City Master Plumbers held a beefsteak dinner, smoker and presentation, as a celebration of the thirtieth anniversary of the National Association of Master Plumbers of the United States.

There were present a few of the old timers who officiated at the conferences with the original organizers of the National Association. The toastmaster of the evening was Joseph A. Prouls, one of the vice-presidents of the State Association, and a member of the Jersey City Board of Health.

When the applause had ceased after his name had been presented, he arose and thanked the members for the honor, although he did not think he could give the Association justice, he would do his best, it being the first time he had ever been called upon for such a purpose and he "delivered the goods" as follows:

"Fellow members and invited guests. While called upon to act as a speaker this evening, I would state there is a two-fold celebration here to-night. The celebration of the Thirtieth Anniversary of the National Association, and another one that I will announce later.

I wish to state that we have with us tonight, a man who on every occasion, when called upon to act in any capacity for this Association or the trade, has thought nothing of leaving his business and answering the call of duty. As I have been associated with him for many years, I have found him a man of honesty and sterling worth, and one who has been the leader of this Association for a number of years in the capacity of presiding officer.

It becomes my duty, imposed by the members of this Association, to present to you, Mr. James A. Joans, a token of the esteem and honor in which you are held by the members of this Association. You have guided the Association for the past eight years and we hope that you may live many years to enjoy the same."

After receiving the token, Mr. Joans was unable to make any remarks for a few moments, the sight of the diamond ring striking him speechless. He thanked the members for the honor bestowed upon him and said he would always remember the Thirtieth Anniversary of the National Association of Master Plumbers.

After an excellent menu, had been partaken of, the toastmaster said:

"We have with us a member who was on the Executive Board of the first National Association. He was also a delegate to the first, second and third National Conventions, and he is still on the job. I will now introduce to you the Honorable James F. Blackshaw." Mr. Blackshaw then spoke in part as follows:

"I attended the first meetings of the committees appointed to organize the National Association and know the work that was required for its perfection. I was one of the members on the Executive Board the first year, and there are but few of us left today."

"You, the present generation of plumbers, are now enjoying the fruits of this Association and the work that was done at that time, and is now being laid out for you young men to follow and continue in the footsteps of the older members, doing as they have done. I thank you for your attention."

The secretary of the Association was introduced by the toastmaster as follows:

"I will now introduce to you a man to whom we often look for advice, and whom we often seek in matters appertaining to the Association. He is also one of the old timers. I introduced to you our Secretary, Mr. P. Moran."

Mr. Moran, as usual, was on the job. He was sorry he had not the first Annual Report, but he had the second and third Annual Proceedings of the National Association with him and read for the benefit of the younger members, the names of those who represented the organization at that time. "There are five in this association at present, Blackshaw, Kelaher, Birkenstock, Lumbusch and Moran. The others are not with us."

"The work which was started thirty years ago, and we are now celebrating that Anniversary tonight, you young men are deriving the benefit of and you should go hand in hand, though not as it was before this started you. Meet the other fellow now and he would look the other way. I will now introduce to you an old "war horse" of the National and this Association, The Honorable Fergus T. Kelaher.

"Mr. Toastmaster, fellow members and invited guests: I do not wish to be classed with Blackshaw and Moran as I am a YOUNG fellow. I wish to state here that there was considerable work and time spent forming this National Association. The committees having this in hand had a good deal to contend with before it came to an issue. I was a small part of the committees and I want to say right here, it was not all sunshine. The young men of today should look to this, as without it, they might not enjoy what they have today from a business standpoint.'

'"In speaking of the young men, I wish to say that we are not looking for their MONEY, but for their PRESENCE at the meetings that they may hear and see what good can be done by the organization. Young men, come to the meetings, express your opinions on any subject that may come up, be it on the smallest or the largest matter: You have that privilege. While we are not all orators, we can give our views on anything that may come up in order to benefit the trade at large, and I hope that this Anniversary will be the means of bringing more of the members and guests here this evening, into the Association. You are aware that we dispensed with the initiation fee until our next meeting, which will amount to twenty-five dollars."

The next man to be introduced was J. J. Heatherington, of Heatherington Brothers. Mr. Heatherington stated that he came not to make speeches, but to be with the Association in the celebration of the Thirtieth Anniversary of the National Association.

The toastmaster then called upon the following, who all answered and made a few remarks on the advantages they found in being members of the Association:

Messrs. Parle, Corcoran, Harriss, Crosby, Ringle, Anderson, Werner, and likewise that faithful watchdog of the Treasury, William J. Cross, who was somewhat indisposed.

The hour was early in the morning of the twentieth when the members returned home.

Pittsburgh Master Plumbers' Celebration.

The first annual banquet of the Master Plumbers Association of Pittsburgh and Vicinity, which was an event at the Hotel Henry the night of Feb. 20 was mainly in honor of the Thirtieth Anniversary of the National Association of Master Plumbers.

There were songs and witty sayings: there were speeches and an ample festal board.

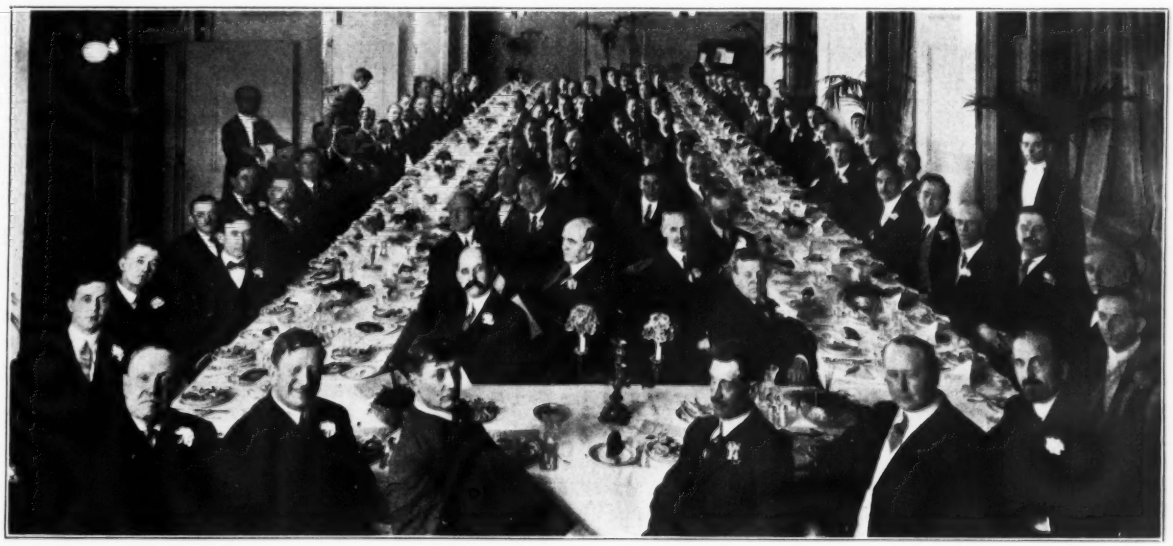
The Pittsburgh association was formed in 1883. It was composed of only 10 members. In the intervening years, there has been a steady growth, until the membership is now nearing the 250 mark, and the greatest gain in the enrollment has been made during the last few years. New life and "ginger" has been injected into the association, so that it might be well said that the Pittsburgh Association has made its greatest strides during the last five years.

There was a bit of sentiment injected into the banquet by Edmund M. Tate, secretary of the Pittsburgh association, when he read the first minutes of the association from the original "book of record." Some of the names which were mentioned have passed to the Great Beyond, while there were three of the original or charter members there. They were S. W. Hare, who is still in business, John Reineke and Louis Heilig, who since retired. Frank McKnight another charter member would have been present, but he is spending a holiday in North Carolina. The first minutes show that the Pittsburgh Association was formed June 23, 1883, and will therefore be 29 years old June next.

An excellent menu was served, during which and between courses two dozen popular airs were sung, commencing with "America" and closing with "Auld Lang Syne." Music was by the Nolava Orchestra, with Frank L. Armstrong as soloist and leader.

Albert S. Whitehead was toastmaster, and he "made a good job" of it. He proved himself to be a ready wit, and he made it a point to "keep away from business," for it was a well known fact that the banquet was one of those things arranged where the social spirit was to prevail, and the "lets-get-acquainted" thought was kept uppermost in mind. After telling a few new and original "yarns," Mr. Whitehead first introduced Dr. E. R. Walters, director of the Department of Health of Pittsburgh, who spoke upon "Municipal Health Work." The speaker dwelt at some length upon the work of his department in Pittsburgh, and made it plain that the department stood ready at all times to be of any service that it could in assisting the plumbers to continue in the "uplift" movement, for the betterment of their trade and also for the betterment of humanity.

George W. Ryan, formerly secretary of the Standard Manufacturing Co., of Pittsburgh, but who is not now associated with that corporation told of "Mistakes—What They Cost." The address of Mr. Ryan was rather brief, and the main point he brought out was a little piece of advice to the plumbers to first find out the cost of a job before it was started on, and to be sure there was a profit in it before it was finally undertaken.



Pittsburgh Master Plumbers Commemorate Thirtieth Anniversary of National Association of Master Plumbers.

John M. Addy, president of the Pittsburgh Association, '98-'99, was given the subject of "Reminiscences." Many interesting incidents in the life of the Pittsburgh Association were related, some of which were familiar to the older members, and new to the late members.

One of the most interesting speakers of the evening was President S. S. White of the Pennsylavnia State Association, and a member of the Pittsburgh firm of plumbers of Carson & White, which is identified with the Pittsburgh organization. "Our Association" was the subject of Mr. White. Almost every word uttered by Mr. White was a boost for the Pittsburgh and state organization. He related the good that the outside plumber was to obtain by coming into the fold, and also of the good that has been accomplished by those who are identified with both local and state associations. Mr. White, did not overlook the National Association, and it was referred to in the most kindly terms.

By the request of National President A. C. Eynon, the following poem, from whence came the adopted motto of the association—"They Builded Better Than They Knew" was read. It follows:

The Problem.

The hand that rounded Peter's dome,
And groined the aisles of Christian Rome,
Wrought in sad sincerity;
Himself from God, he could not free;
He builded better than he know;—
The conscious stone of beauty grew.

—Ralph Waldo Emerson.

The Officers of the Pittsburgh Association for the current fiscal year are as follows: President, W. H. Roswell; first vice president, Harvey Lewis, jr.; Second vice president, George B. Stewart; secretary-treasurer, Edmund M. Tate; members at large F. J. Scheib, A. J. Zilliox, R. J. Hannan; sergeant at arms, A. S. Whitehead; ex-officio, M. Purtill; Committee on arrangements, M. Sniveley, chairman, George M. Millier, H. T. Barr, John Leubin, Theodore R. Marshall.

Memory of past years in the life of the Pittsburgh Association was recalled when the list of past presidents were read. They are as follows: 1883 I. K. Becker—1884 Chas. Humbert—1885 Chas. Humbert—1889 Allan McFadden—1890 J. J. Kennedy—1891 Jas. Hay—1892 Jno. M. Tate—1893 Jno. Reincke—1894 Frank Blythe—1895 Chas. Humbert—1896 Frank McKnight—1897 Jno. M. Addy—1898 Jno. M. Addy—1899 Geo. Addy—1900 W. H. Williams—1901 Mack Snively—1902 S. S. White—1903 Hugh M. Hay—1904 Hugh M. Hay—1905 Edmund M. Tate—1906 W. J. Elkin—1907 Jno. H. Keane—1908 Al. S. Whitehead—1909 H. L. De Witt—1910 S. S. White—1911—M. Purtill.

Washington, D. C., Master Plumbers Celebrate.

The Washington, D. C., Association of Master Plumbers celebrated the thirtieth anniversary of the founding of the National Association, on February nineteenth last, in the form of a ladies' evening. The program included a theatre party, followed by a banquet. The Cafe Republic was the banquet hall, and the room was especially decorated for the occasion.

The wife of one of the local association members is a cartoonist of some degree, evidenced by the pen and ink sketches which adorned the walls of the banquet hall and which were characteristic of recent "sporting events" of some of the members.

There were no set speeches, but chairman Walter D. Nolan of the committee on arrangements, officiating as toastmaster, called on president Frederick W. Quinter of the local association, who dwelt almost entirely on local association work, and concluded by complimenting the committee on a most excellent evening's entertainment. Following Mr. Quinter, Mr. Samuel S. Shedd who attended the first National Association convention, and who was at that time elected as state vice-president for the District of Columbia, gave a short resume of National Association affairs. Mr. Ed. J. Harman, an ex-National Association president, then gave a very interesting and instructive talk about the organization.

Although the occasion was one which was supposed to have been devoted more strictly to the observance of association matters, the chairman on account of the presence of ladies, enlivened the occasion at this point by calling on Mr. John J. Nolan, who told a number of humorous anecdotes.

It was in the small hours of the morning when the hundred or more members and their guests concluded their evening of celebration, and they all voted the affair an immense success.

The personal of the committee on arrangements was: Walter D. Nolan, chairman; Frederick W. Quinter, Samuel Artz, M. J. McCarthy, William Conradis, D. J. Murphy, P. T. Noland, Frederick C. Stetzer, Peter C. Shaefer and Henry Allen.

Among the members and guests present were, Mr. and Mrs. William Shields, Mrs. Elizabeth Mason, Miss Ethel R. Viereck, Mr. Paul A. Viereck, Mr. E. J. McGolrick, Mr. and Mrs. Frederick W. Quinter, Mr. and Mrs. M. J. McCarthy, Mr. and Mrs. P. T. Niland, Mr. and Mrs. David E. Jenkins, Mr. and Mrs. George D. Warner, Mr. and Mrs. George W. Hanes, Mr. and Mrs. William Koch, Mr. and Mrs. W. W. Koch, Mr. Elmon Koch, Miss Hazel G. Koch, Mr. and Mrs. David H. Stevens, Mr. and Mrs. Thomas O. May, Mr. and Mrs. Walter D. Nolan, Mr. Matthew P. Nolan, Mr. J. P. Nolan, Mr. and Mrs. Frederick C. Stelzer, Mr. and Mrs. Peter C. Schaefer, Mr. and Mrs. John J. Nolan, Mr and Mrs S. W. Rittenhouse, Mr. and Mrs. Thomas C. Clark, Mr. Edward J. Hannan, Mr. and Mrs. D. J. Murphy, Miss Marareta Murphy, Miss Nellie Murphy, Mr. and Mrs. Arthur J. Tholl, Mr. and Mrs. James E. Mulcare, Mr. and Mrs. Frank A. Kerr, Mr. Joseph A. Herbert, Mr. L. M. Herbert, Mr and Mrs. William Conradis, Mr. and Mrs. Samuel Artz, Mr. and Mrs. E. H. Bogley, Mr. and Mrs. John L. Shedd, and Mr. and Mrs. Samuel L. Shedd, Mr. and Mrs. Patrick F. Hannan.

Bridgeport, Conn., Celebration Banquet.

Fifty members of the Master Plumbers Association of Bridgeport, Conn., gathered at the Atlantic Hotel in that city on the evening of February 19 to do their part in celebrating the anniversary of the birth of the National organization. Guests were present from Fairfield, Norwalk, Stamford, Greenwich, New Canaan and Stratford. William P. Kirk was toastmaster at the speaking which followed dinner and introduced M. W. Manwaring, John F. Brady, L. H. Mills and others.

The affair was in charge of a committee composed of R. T. Rock, F. C. Booth, A. E. Roberts, J. E. Brady and G. E. Scofield.

Banquet of Ft. Worth, Texas Master Plumbers' Association.

One of the many successful social events in honor of the thirtieth anniversary of the founding of the National Association of Master Plumbers, was a banquet and informal ball at Ft. Worth, Texas, given by the Master Plumbers' Association of that city.

The success of this social event was a result of the efforts and careful planning of the association's committee on arrangements consisting of Charles B. Glenk, C. J. Garrettson and G. E. Allgair.

The banquet room was decorated with festoons of evergreens and each lady was presented with a corsage bouquet of sweet pease and each gentleman with a carnation, after which the toastmaster announced that the time had arrived for the consideration of the serious business of the evening and presented menu cards indicating that the committee on arrangements had given most careful attention to the most important feature of the evening's entertainment.

After further consideration and various expressions of approval as to the excellence of the menu as presented, the floor was cleared and dancing was enjoyed until

twelve o'clock, and everyone voted the entire entertainment one of the best social events they had ever attended.

Invited guests at the banquet included: Mr. & Mrs. B. L. Logan, Mr. and Mrs. Chas. Orr, Chas. Adams and W H. Hardy of Ft. Worth, and Mr. and Mrs. E. F. Alt of Dallas.

K. E. Irvin presided at the banquet as toastmaster and the following program of five minute speeches was rendered:

"Address of Welcome" by W. P. Harrison, local president.

"The National Association" by Fred Robbins, local secretary.

"The State Association" by W. E. Thatcher, state secretary.

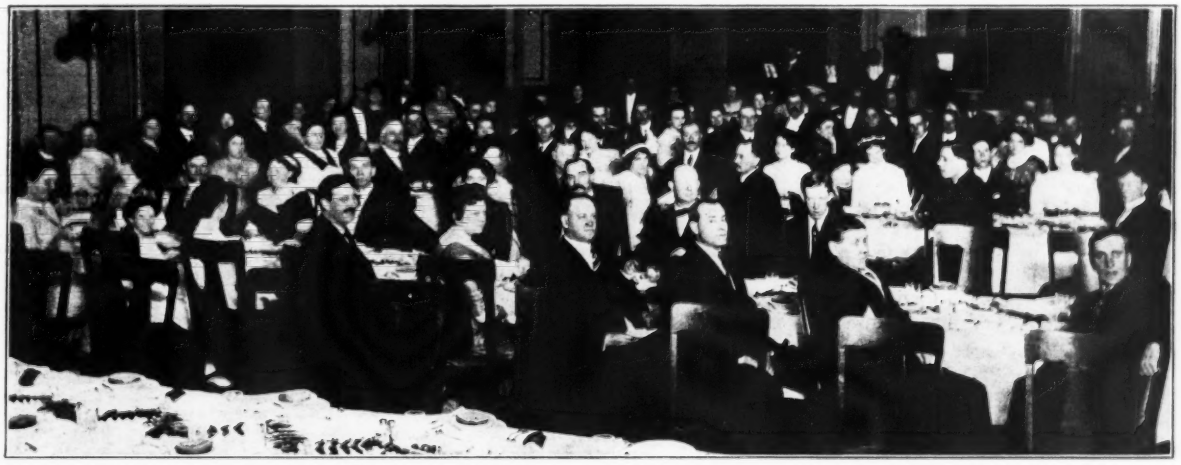
"The Relation of the Supply Houses and Manufacturers with the Master Plumbers" by B. L. Logan, E. F. Alt, Chas. W. Orr, Chas. Adams.

Garde, Hartford. Following the dinner President Daniel F. Sullivan gave an address of welcome and introduced the speakers. James F. Duffy responded to the toast, "The History of the National Organization" and gave an interesting talk on the work of the national body; Thomas L. Dowling, responding to the toast, "The State" reviewed the work in Connecticut; and Major Edward Mahl spoke on "Reminiscences of the Trade."

The committee in charge of the dinner was composed of Thomas L. Dowling, Arthur J. McManus and Thomas F. Dunn.

Banquet and Theatre Party, Features of Camden, N. J., Master Plumbers' Celebration.

The Master Plumbers' Association of Camden, N. J., celebrated the thirtieth anniversary of the National Association with a banquet at the New Ridgway hotel and a theatre party at the Chestnut Street Theatre.



Denver Master Plumbers Enjoying Main Feature of Their Celebration.

Denver Master Plumbers Celebrate with Banquet, Entertainment and Ball.

One of the most enjoyable social events in commemoration of the thirtieth anniversary of the organization of the National Association of Master Plumbers of the United States was a banquet, entertainment and ball given by the Denver Master Plumbers' Association on Monday evening, February nineteenth.

A carefully prepared program was the result of the work of a committee on arrangements composed of George E. Smith, A. J. Davis, Robert M. Small, A. P. Gumlick and A. J. Jahraus. This committee was assisted by a banquet committee, the members being A. J. Davis, A. P. Gumlick and Robert M. Small. W. O. Warlum, president of the Denver local organization, presided as toastmaster at the banquet, which was held in the banquet room of the Albany Hotel. Interspersed with the service of a most excellent menu, the guests enjoyed orchestra music and vocal selections as a part of the evening's program.

Following an address by A. P. Gumlick on "The National Association, Past, Present and Future," the banquet hall was cleared of tables and a dancing program furnished a fitting climax to the evening's entertainment.

Master Plumbers' Association, Hartford, Conn., Banquet.

The Master Plumbers' Association of Hartford, celebrated the national anniversary with a banquet at Hotel

This banquet and theatre party is marked as the most enjoyable social event in the history of the Camden local organization of Master Plumbers.

Emil Riegert, president of the local association, presided as toastmaster at the banquet, and in a very neat speech, welcomed the members and their wives. He spoke of prosperous conditions of the association and the intention to have these little affairs for the entertainment of the ladies to brace the association.

Mr. George Leathwhite spoke of the old time plumbers and conditions as they were when water and sewer systems were installed. He also complimented the members on the nice showing made by the attendance at this social event and urged them to gather more frequently for social intercourse.

Mr. Edward Kelley, vice president, was then called upon and very pleasantly outlined the past work and accomplishments of the organization. Mr. Walker, the past president, responded to the toast "Our Young Men in the Business," which he handled in a business-like manner.

Secretary Zimmerman then spoke on the loyalty of the members and said he hoped by the end of the year to show a larger roll as he had several applications to be acted upon at the next meeting, which would be held on a very near date.

After a rising vote of thanks was extended to William J. Kelley, chairman of the entertainment committee,

Mr. James West, the watch guard of the treasury, who by his diligent and untiring efforts has made this association one of the strongest in South Jersey, was introduced. His remarks touched on the advancement of the plumbing business in general.

Harry J. Farrell, national state vice president, spoke of the working of the association in the State and nation. He reported an increase of 100 members in the State association during the years. Mr. Farrell complimented the Camden Association on its growth and urged them to frequently entertain the ladies.

A letter was read from Mr. A. C. Eynon, national president. After congratulating the members in good standing, he said:

"It is the history of nearly thirty years ago, long forgotten and now unknown to the members of to-day except to be remembered by the interested as of yore, watching and aiding as best they can the rapid onward march of our progressive association, which they helped to mould with pen and voice and brain. May this bit of early history be interesting and provide loyalty and courage to each and every member to keep on marching to greater victory."

At the festive board were seated the following: Mr. and Mrs. Emil J. Riegert, Mr. and Mrs. George Leathwhite, Mr. and Mrs. James B. West, Mr. and Mrs. Edward F. Kelley, Mr. and Mrs. William J. Kelley, Mr. and Mrs. Frank E. Zimmerman, Mr. and Mrs. Fred I. Needham, Mr. and Mrs. Frank S. Walker, Mr. J. F. Walton and daughter, Mr. Patrick F. Smith and Miss Kathryn Smith and Harry J. Farrell.

Each lady was presented with a handsome souvenir and each member received a cigar holder. The committee on arrangements was William J. Kelley, chairman; James B. West, Walter A. Mendel, Edward F. Kelley, A. D. Reed and Emil J. Reigert.

Celebration by Master Plumbers of Providence, R. I.

The thirtieth anniversary of the birth of the National Association of Master Plumbers and the thirty-second anniversary of the founding of the Providence, R. I., association were jointly celebrated by the members of the latter association with banqueting and speechmaking. Mayor Henry Fletcher and Plumbing Inspector Reuben S. Bemis were the special guests of the occasion, while John F. Davey of East Providence, president of the Rhode Island State Association was the toastmaster of the evening. The dinner committee consisted of T. J. Tierney, William M. Keller, James Donnelly.

South Bend, Indiana, Celebration Marks Progress In Organization Work.

Celebrating the thirtieth anniversary of the organization of the Master Plumbers' Association, members of the local master plumbers' organization of South Bend, Indiana held their first annual banquet on Monday evening, February nineteenth, in the German Odd Fellows' Hall in that city.

The South Bend Master Plumbers' Association was organized nineteen years ago with four charter members. The first officers of the Association were D. A. Westbury, president, Gus Wenger, Secretary, and James Aslin, treasurer. Since that time the organization has enjoyed a steady growth and at present practically all of the employing plumbers in the city of South Bend, are members. The present officers are Thomas Williams, president; Chris Aichele, vice-president; William Burke, secretary; James Aslin, treasurer. Mr. Aslin having been treasurer since the organization.

At the banquet, Mr. Williams, who acted as toastmaster, gave an address on "The Association" and was followed by the Messrs. D. A. Westbury, Thomas Flynn of Niles, Edward Weaver, city plumbing inspector, and Frank Skekonger of Mishawaka, who responded to toasts.

Thirtieth Anniversary of National Organization is Observed by Good Crowd.

The Master Plumbers of Cedar Rapids, Iowa, united in a big time in Canfield hall on the evening of February nineteenth, in observance of the thirtieth anniversary of the national organization. The evening began with a banquet at which were seated fifty-nine members of the local organization and the good things set before them were certainly all that could be desired even for an especial occasion like an anniversary celebration.

The program was one of the general kind and not a person present was overlooked in an opportunity to express himself. Some gave excellent talks while others were more content to listen. Charles McHugh presided as toastmaster. Some of the ladies present also responded and the entire program proved most enjoyable. The tables were then removed and the balance of the evening was devoted to a general good time. There were all kinds of games, delightful music, and those who were so inclined, enjoyed a social dance.

PREPARING FOR PENNSYLVANIA MASTER PLUMBERS CONVENTION.

It is practically an assured fact that President S. S. White of the Pennsylvania State Association of Master Plumbers will not be a candidate for re-election at the next annual meeting. This convention will be held in Philadelphia April 16th and 17th and the matter of entertaining the delegates has already been taken up by the Philadelphia Association.

It is an admitted fact that during the two years Mr. White has served he has rendered excellent and most valuable service to the association, and also to the various associations throughout the state. It is well remembered by all those who were at the 1911 meeting in Johnstown, Pa., that Mr. White did not want to stand for re-election, pressure was brought to bear upon him, that caused him after considerable consideration to stand for re-election.

Delegates were so well pleased with the work of Mr. White, that they thought it rather inopportune to make a change at that time, for they wanted him to continue his work of up-building for another year. With the explicit understanding that he would not again allow his name to be presented for the presidency, he consented to serve just another term. This much is history.

Pittsburgh plumbers will likely charter a special Pullman car to make the trip to the State convention this year. This matter has been suggested by some of the members of the local organization, and it will be taken up in definite form in ample time.

Brookings, S. D.—Arthur F. Marvin has opened an up-to-date plumbing establishment in the Bradbury building.

Fond du Lac, Wis.—The Sanitary Plumbing Co. has been incorporated with a capital of $5,000. The incorporators are Frank O. Funkey, E. W. Funkey and J. A. Harlin.

Personal Contact and Personal Responsibility

By Henry B. Frank

Not long ago I had occasion to call on a master plumber on business, and while in his office the book-keeper came in and told him that one of his customers (naming him) wanted to see him about some work.

He told the girl to send one of the men down to the house to attend to the matter. This procedure rather astonished me, and I asked the plumber if he were too busy to go there, or if he were afraid of his last job done there.

I was informed that neither guess was correct, but that he simply did not feel like being bothered running after every Tom, Dick and Harry who happened to have work done in his shop. Trying to reason with the man and show him the mistake he was making by losing personal contact with his customers and his business, I was met with the remark that if people were not satisfied with his way of doing business they could go elsewhere. I finally prevailed upon his lordship to look up the account of this particular customer, and we found that where his work had in the past five years amounted to a considerable sum annually, it had during the last year fallen off to about one-third that of previous years, and bills for the last two months had not yet been paid, which was also unusual. Here a master plumber was losing the personal contact with his work and with his customer, and was shirking his personal responsibility, with the result that in this one case business from that source had dwindled to one-third of the usual amount, and probably would soon be lost altogether.

Upon returning to my own place of business, I sat down to a quiet little smoke and had a little think over the incident I had just witnessed. It was not a hard matter to find that I also had been growing just a little careless in keeping up the personal contact with my customers, and was shirking some of the personal responsibility.

We are all of us at times, and some of us most of the time, apt to make this mistake. Probably very few of us are as brutally frank as my friend was in this instance in seeking to evade our duty in this respect. But to some extent we are probably, all of us, more or less guilty. When a stranger comes to us with a business-proposition, we give him our best attention and try to secure a customer. After he has been coming our way for a number of years, we are very apt to feel that in a measure we own him, or rather his work. Instead of looking after his work personally, we are very apt just to send around a journeyman, and let the journeyman assume our responsibility. The first thing we know, the customer no longer comes our way, and we wonder why! Perhaps we find, as is frequently the case, that our erstwhile journeyman having, through our initiative, come into personal contact with the customer and assumed our personal responsibility, has taken the customer away from us. Sometimes we realize too late that the customer tires of doing business with understrappers, and has gone to a shop where the head of the establishment finds it advantageous to call at the job once or twice to see what is wanted and to make sure that the customer is being satisfied and everything is going right.

"I Was Informed That He Didn't Have Time to Run After Every Tom, Dick and Harry Who Was Having Work Done by His Concern."

Personally, I consider that a master plumber's biggest business asset, next to financial honesty and technical ability, is his personality. That is, his full assumption of responsibility for all work done and bills charged by his employees. This responsibility he cannot shirk and hold his trade, especially the jobbing, overhauling and estate end of it. So that his personality may be recognized, he must seek at all hazards to keep up the

personal contact with his customers and with the work. It is humiliating when the customer comes in and asks him what was the matter at 615 Jefferson St., to be obliged to ask the bookkeeper for information, and to have the bookkeeper admit that he does not know, but will ask the journeyman who did the work.

Of course, I know full well that it is a physical impossibility to be in more than three or four places at one and the same time. But it does seem to be beyond question that it is better to hire others to do the bookkeeping, the journeyman's work, the collecting and even, if necessary, the estimating, to the end that we may

The Familiar "Charlie" Denotes the Personal Contact.

keep up to the fullest extent our personal contact with our customers and with our work.

Very apropos is the remark I recently overheard in a trolley car. Two gentlemen were talking about having their houses painted, and were questioning each other as to who was going to do the work. One man said: "I am going to have the Schultz Decorating Co.; they were the most reasonable bidders." The other man said: "I am going to have Charlie Van Thum. He is a little high, I know, but he always comes around and looks after his work."

Notice the manner in which these two men spoke of their respective painters. The familiar "Charlie" alone denotes very graphically the personal contact through which Van Thum was able to obtain a satisfactory price for his work and hold the good-will of his customer, while the Schultz Co. would get the jobs on which it was the lowest bidder. What that signifies, we all know.

Of course, there are some people so constituted that they would rather do work on the lowest figure and no responsibility plan. But on the long road that we have to travel through life, I believe the other plan is the most satisfactory, considered mentally, morally and financially. It is to keep your personal contact with your customers, and their work. Cheerfully assume your just responsibility, and you will get paid for it just what you think it is worth, within reasonable limitations.

THE METAL MARKET

SCATTERING ORDERS ON PIG IRON.

The severe spell of protracting cold weather has materially lessened the demand for iron from important centers, and its effect will probably be more noticeable in the steel market later; already there has been shading in the price of numerous lines of steel. The actual buying has not been large, but a New York manufacturer of heating supplies purchased 18,000 tons, and several New England foundries are in the market. Sales of Southern iron have been made at $10.50 Birmingham, and one sale of No. 2 Southern was made on a $10.25 basis Birmingham. Pipe manufacturers are still buying iron, and the amount of water pipe which will be taken by the municipalities will probably exceed that of the last season. Quotations are as follows:

No. 2 Southern foundry, Birmingham	$10.25 to $10.50
No. 1 Northern foundry, New York	15.00
No. 2 X Northern foundry, New York	14.75
No. 8 Plain Northern foundry, New York	14.50 to 14.75
No. 2 Plain Northern foundry, Chicago	14.00

OLD IRON.

Somewhat of an improvement in the demand for cast scrap is noted, but this is confined largely to the cheaper grades. Dealers' prices in New York, per gross ton, are as follows:

No. 1 yard wrought, long	$10.00 to $11.50
No. 1 yard wrought, short	9.00 to 9.75
Machinery cast	11.00 to 11.50
Light iron	4.50 to 5.00
Wrought turnings	7.00 to 7.50
Pipe and tubes	9.50 to 9.75
Stove plate	8.75 to 9.00
Malleable cast	9.00 to 9.50

CONTINED IMPOVEMENT IN COPPER.

Prices of copper have again advanced and Lake is now held squarely at 14.50 cents; Lake electrolytic is firm at 14.25 to 14.37½ cents. The demand shows only a small improvement, it is true, but there is a great deal of copper being consumed both at home and abroad, and the remarkable ease at which stocks melted in the last few months has given the copper producers a feeling of their own importance. The exports continue to be the feature of the trade, running well above 1,000 tons a day.

PIG TIN.

Buyers have been reluctant to follow up the market and prices have fallen slightly. The disappearance of the premium for spot tin was the most notable feature.

LEAD.

The demand for lead is small even at the ruling low prices, but it is believed that a large amount of business was transacted on the decline. Lead is now selling at 4 cents New York, and 3.95 cents St. Louis.

SPELTER.

Another advance in spelter brings the price to within hailing distance to that of late last year. For prompt delivery spelter is held at 6.65 cents New York, and 6.60 cents in St. Louis.

Threading Steel Pipe

Practical Points for Most Economical Results Under Ordinary Shop Conditions. Effect of Dull Tools on Different Qualities of Steel Pipe

By W. C. Longenecker, of Toledo, O.

Inasmuch as a manufacturer of pipe has issued and circulated a bulletin on "pipe-threading and pipe-threading practices," which is excellent as far as it goes, yet does not conform to practicability under the ordinary conditions which prevail in the average shop where pipe is threaded, as it deals only with the old-style stationary die where the width of the chaser has to equal the length of the thread in order to secure the necessary taper; I venture an explanation of why I believe that the manufacturer's data, if applied, would not be productive of the best of results, or the best economy of labor. This explanation is based on the difference in action of the old-style stationary dies and the new narrow receding die principle.

For purposes of more comprehensive illustration, each figure in the sketch, Fig. 1, shown has been approximately doubled in size. Referring to the sketch, "A" represents a single chaser of the old type in contact with a finished pipe thread. "B" represents a chaser of the narrow receding type in similar contact.

It will be clear that in using dies of the former type each individual tooth of the chaser "A" will be cutting on both sides at once. And it also follows that all the teeth in the entire set of dies are engaged simultaneously. Approximately one hundred and forty-four teeth would be engaged at the completion of a thread on pipe from four inches to seven inches, for example, according to the table relative to the number of chasers given in this bulletin.

The objections to this form of threading dies are many. The unnecessary amount of power required to cut a thread; the tendency of threads to tear off, especially when threading steel; and the tendency of splitting the smaller sizes of butt welded pipe at the weld, are perhaps the three most serious objections.

The first of these is not so noticeable perhaps in power-threading machines as with tools operated by hand. You are, of course, aware that with the old-style stocks and dies the combined efforts of two men are required to thread a two-inch pipe, while with dies made on the receding principle one man can cut a two-inch thread (or an eight-inch thread), with one hand. This fact clearly demonstrates the relative amounts of power required.

The difficulty in threading pipe without tearing the threads is due largely to the peculiar qualities of steel used in the manufacture of pipe. This difficulty seems to be accentuated when "open-hearth" steel is used. This material, while excellent for the purpose intended, is not popular with the trade for the reason that it cannot be threaded readily with the wide form of dies. In fact, it is absolutely impossible to thread "open-hearth" steel pipe with this type of dies unless they are made just right as to clearance, etc., are given a large amount of hook or rake, and are kept absolutely sharp.

It is a fact well known by any who are familiar with cutting tools of any description that a thin chip or shaving cannot be produced with a dull tool. In the case of the wide die there is so little metal for each chaser to cut that unless it is very sharp it will ride over the thread until the increasing diameter causes it to dig in. When this happens any individual thread, being seized on both sides at once, will be likely to be torn out entirely. To make this clearer, we will assume we are threading a 10-in. pipe with an old style die-head having twelve chasers. Standard pipe has ¾-in. taper per foot, or 1/16 per inch. The increased diameter in ⅛-in., or one thread, would, therefore, be ⅛ of 1/16 or 1/128-in.

Consider a chaser like "A"—twelve of these chasers making up the set of dies and all working on the pipe at once. We will say No. 2 traveling in the threads cut by the preceding chaser No. 1 to a point formerly occupied by No. 1. In this 1/12 of a turn, the increase in diameter and the depth of cut would be 1/12 of 1/128 or 1/1536-in., or about 1/3 of the thickness of a hair. It is obvious that this small amount

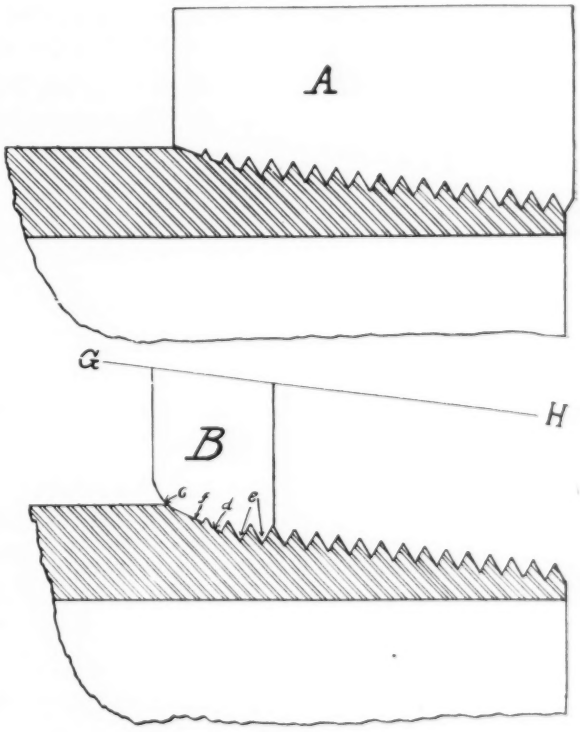


Fig. 1.

can only be cut with a very sharp tool. The result is usually, as stated before, the chaser will alternately slide over and dig in, thereby causing rough work, unnecessary friction and power consumption.

Another circumstance that causes tearing is the tendency of the chips to clog or jam. This is due mainly to chips coming from the opposite sides of any given tooth meeting in the center of that tooth and jamming betwe n the threads.

This action not only causes a very rough thread but will often tear a thread out bodily. Various schemes have been tried to eliminate this trouble. Cutting out alternate teeth in the chaser gives some relief, but dies of this character are short-lived. About the only way to make dies of this character practical seems to be as shown in Fig. 1-A of the

bulletin referred to. And even this practice is not always effective in the case of dies made for threading several sizes of pipe because the excessive rake coupled with the necessarily excessive clearance will cause the dies to dig in and produce a wavy thread if it does not altogether "stall" the tool. It would appear that the main advantage gained by this construction would be to cause the chip to leave the thread at right angles to the surface of the pipe, thereby clearing itself, instead of at right angles to the side of the thread, where it would come in contact with a chip from the opposite direction and jam or clog as described in the preceding paragraph.

Splitting pipe while threading, is caused largely by dull dies, and this process of alternately sliding over and then digging in, before described. If, when the thread is nearly completed, one of the chasers should happen to dig in at the weld, the wide cutting edge usually will split the pipe unless the weld is nearly perfect.

The cutting action of dies made like "B," where the chasers are allowed to recede along the line "GH" is entirely different from the dies made like "A." The portion of the cutting edge at "c" acts in the same manner as a lathe turning tool and removes all stock not required for the thread. The part "f" cuts a shallow groove. The tooth "d" deepens this groove, while the full teeth "e" merely sharpen the bottom of the thread. All chips leave the cut at approximately right angles to the pipe and there is no tendency whatever to jam and tear the thread. "Open-hearth" steel pipe can be threaded as easily as iron, in fact, it is sometimes preferable to iron on account of its freedom from dirt. The cutting edge "B" being so narrow compared with "A," there is no danger whatever of splitting pipe. It is well known by steamfitters that pipe split in power machines can be readily threaded with tools embodying the narrow receding die principle.

DATES OF TRADE CONVENTIONS TO BE HELD DURING ENSUING MONTHS.

March 12 and 13, 1912.—The 21st annual meeting of the Kansas Master Plumbers' Association, will he held at Hutchinson. The sessions of the convention will be held in the Mercantile Club rooms, and headquarters will be established at the Bisonte Hotel. The officers are: President, M. M. Hartzel, Pittsburg; vice-president, A. P. Elder, Ottawa; treasurer, F. H. Bowers, Emporia; secretary, E. D. Draper 644 State Ave., Kansas City.

March 12 and 13, 1912.—The 19th annual convention of the Indiana Master Plumbers' Association, at Evansville. Headquarters will be established at the New Vendome Hotel. The sessions of the convention will be held in the E. B. A. Hall. There will be a meeting of the board of directors at the hotel on March 11th. The officers are: President, C. H. Maloney, Gary; secretary, John B. Burke, 521 Washington St., Gary.

March 12 and 13, 1912.—The 24th annual convention of the New York State Association of Master Plumbers in Troy, N. Y. The sessions will be held in the Germania Hall and headquarters will be established at the Rensselaer Hotel. The officers of the association are: President, John H. Moran, Albany, N. Y.; vice-president, Frank B. Lasette, New York City; secretary, James H. Doody, Albany, N. Y.; treasurer, Chas. A. Campbell, Watertown, N. Y.

March 26 and 27, 1912.—The 20th annual convention of the Michigan State Association of Master Plumbers, at Kalamazoo. The sessions of the convention will be held in the Auditorium, and headquarters will be in the Burdick Hotel. Officers of the state association are: President, Thos. J. Shields, Lansing; vice-president, Geo. McCullom, Muskegon; secretary, Wm. A. Decker, 132 Canal St., Grand Rapids.

April 23, 24 and 25, 1912.—The annual convention of the Texas State Association of Master Plumbers, at Fort Worth, Tex. The arrangement committee for the convention is composed of the following master plumbers: W. E. Thatcher, chairman; P. E. Fosdick, Fred Robbins, Wm. Blevins and W. H. Payne, all of Fort Worth.

May 7, 1912.—The annual convention of the West Virginia State Association of Master Plumbers, at Clarksburg, W. Va. The officers of the association are: President, W. A. Wiedebusch, Fairmont; secretary-treasurer, E. C. Wiedebusch, Morganstown.

May 13, 14 and 15, 1912.—The annual triple convention of the American supply and Machinery Manufacturers' Association, the National Supply and Machinery Dealers' Association and the Southern Supply and Machinery Dealers' Association at Norfolk, Va. Headquarters will be established at the Monticello Hotel. F. D. Mitchell, 309 Broadway, New York City, is secretary-treasurer of the American Supply and Machinery Manufacturers' Association.

May 14-17, 1912.—The sixth annual convention of the Master Boiler Makers' Association, at Pittsburgh, Pa. Headquarters will be established at the Fort Pitt Hotel.

June 4, 5 and 6, 1912.—The seventh annual meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers, in St. Louis, Mo. The officers of the society are: President, Martin Conroy, St. Paul, Minn.; first vice-president, John Hefferman, Houston, Tex.; second vice-president, Lawrence J. Lawler, Pittsburgh, Pa.; secretary and treasurer, Thos. J. Claffy, City Hall, Chicago.

June 25, 26 and 27, 1912.—The fourth annual meeting of the National District Heating Association, in Detroit, Mich. The officers of the association are: President, A. D. Spencer, Detroit, Mich.; first vice-president, Warren Partridge, Springfield, Ill.; second vice-president, R. D. de Wolf, Rochester, N. Y.; third vice-president, Cadwallder Evans, jr., Pittsburgh, Pa.; secretary-treasurer, D. L. Gaskill, Greenville, O.

July 12 and 13, 1912.—The Colorado Master Plumbers' Association will hold its convention in Cheyene, Wyo. This association includes master plumbers of Colorado, New Mexico, Wyoming and Utah. The president of the association is Chris. Irving, 1525 Larimer St., Denver, Colo.

July 16, 17 and 18, 1912.—The 30th annual convention of the National Association of Master Plumbers, in Salt Lake City, Utah. The officers of the association are: President, Alfred C. Eynon, Canton, O.; vice-president, Frank J. Fee, New York City; secretary, Louis E. Deuble, 312 N. Market St., Canton, O.; treasurer, William McCoach, Philadelphia.

Dallas, Tex.—The master plumbers of Dallas tendered a farewell banquet on February 13th at the Oriental Hotel to Douglas J. Mahoney, on the eve of his departure for Savannah, Ga. Mr. Mahoney, who has been connected with the Gomer Co. and the Ahrens & Ott Mfg. Co., goes to Savannah to assume the duties of vice-president and general manager of the Hartfield & Garbutt Plumbing Co. The banquet was attended by about fifty of Dallas and Fort Worth master plumbers, and speeches were made by Dan F. Sullivan, P. J. Sheehan and John Senchal.

News of the Wholesalers and Their Products

Central Supply Association Meeting a Success—Government Cases Nolle Prossed—Other News of Personal and Business Interest in the Trade

MEETING OF THE CENTRAL SUPPLY ASSOCIATION AT CHICAGO, FEBRUARY 28, 1912.

The Central Supply Association held its annual mid-winter meeting in the Sherman House at Chicago, on Wednesday, February 28. The meetings were the best attended in the history of the association, and together with the usual good fellowship, important business topics were discussed during the sessions. No regular program was followed, but the meeting as a whole, was both profitable and enjoyable.

Upon the calling of the roll, the following members responded as present:

Alcoma, Wis.—Plumbers' Woodwork Co., S. H. Newman.
Birmingham, Ala.—Hammond-Byrd Iron Co., Chas. W. Badger.
Burlington Wis.—Burlington Brass Works, S. Jacobson, C. Roy McCanna, Geo. P. Stannard.
Cedar Rapids, Ia.—Cedar Rapids Pump Company, A. E. Mulford; Dearborn Brass Co., E. S. Seeley.
Chicago, Ill.—W. D. Allen Mfg. Co., T. L. Ryerson; American Radiator Co., J. E. Holland; Chicago Granitine Mfg. Co., J. A. Washeck; Central Foundry Co., C. B. Todd; Davies Supply Co., W. B. Davies; The Deschauer Co., Otto Deschauer; Findeisen & Kropf Mfg. Co., Geo. J. Blowers, O. F. Kropf; Henion & Hubbell, W. B. Henion; Illinois Malleable Iron Co., E. M. Marshall, J. R. Steneck; Kellogg-Mackay Co., C. V. Kellogg; Kelly & Jones Co., L. C. Huckins; Mark Mfg. Co., W. H. Bruce, L. P. Sutter, E. A. Eichel, D. T. Bechtel; National Plumbing & Heating Supply Co., E. C. Garrity; National Tube Co., A. N. Hobart, W. W. Orrison, L. R. Phillips; Peerless Heater Co., Aaron J. Bodenweiser; Republic Iron & Steel Co., C. H. Erb, L. W. Crane, R. P. Zint; Republic Mfg. Co., W. A. Ratcliffe, C. C. Stringer; J. J. Ryan & Co., J. J. Ryan; Spang Chalfont & Co., W. M. Thompson; Spencer Heater Co., P. J. Dougherty; Street & Kropf Mfg. Co., Geo. J. Blowers, O. F. Kropf; Henion & Hubwell Bros., I. Weil; Weir & Craig Mfg. Co., James Weir; Western Plumbing Supply Co., John J. Tyne; Whitney & Ford, Chas. A. Ford; S. Wilks Mfg. Co., H. M. Sedgwick, Edwin S. Sedgwick.
Cincinnati, O.—Merkel Bros. Co., A. A. Merkel.
Cleveland, O.—E. W. Fisher Co., J. H. Lehmann.
Consholocken, Pa.—Eastern Range Boiler & Welding Co., H. B. Hallett.
Dayton, O.—Dayton Supply Co., J. W. Downer.
Decatur, Ill.—Field & Shorb Co., W. C. Field.
Denver, Col.—Morse Bros. Machinery & Supply Co., Geo. G. Morse; M. J. O'Fallon Supply Co., C. G. McKenna.
Detroit, Mich.—Detroit Brass Works, O. P. Benjamin, F. M. Minninger, E. L. Uhl; Detroit Lead Pipe and Sheet Lead Works, E. A. Morris; Detroit Range Boiler Co., E. W. Stoddard, G. A. Moore; Diamond Mfg. Co., D. B. Lee; Ideal Mfg Co., James P. Feely, Jr.; U. S. Radiator Corporation, E. E. McNair, Warren S. Hellis; Walker Mfg. & Supply Co., John Walker.
Dubuque, Ia.—Kretschmer Mfg. Co., Fred N. Kretschmer; A. Y. McDonald Mfg. Co., A. Y. McDonald.
Eau Claire, Wis.—W. H. Hobbs Supply Co., W. H. Hobbs.
Fort Dodge, Ia.—Leighton Supply Co., E. I. Leighton.
Fort Wayne, Ind.—P. & H. Supply Co., E. W. Puckett; Van Arnam Mfg. Co., E. E. Parker.
Grand Haven, Mich.—William Heap & Sons, C. R. Heap.
Grand Rapids, Mich.—Ferguson Supply Co., Ltd.
Indianapolis, Ind.—Indiana Supply Co., J. Gilchrist; Shirley Radiator & Fdy. Co., Fred W. Smith.
Kalamazoo, Mich.—Enameled Tank Co., Carl H. Zwermann; Quinn Mfg. Co., C. A. Schultz.
Kansas City, Mo.—W. B. Young Supply Co., Geo. H. Gorton.
Kenosha, Wis.—Frost Mfg. Co., W. J. Frost.
Kokomo, Ind.—Central Closet Mfg. Co., Geo. A. Harper; Great Western Pottery Co., A. V. Conradt, G. C. Kalbfleisch, E. Willard.
La Crosse, Wis.—La Crosse Plumbing Sup. Co.; W. A. Roosevelt Co., T. H. Brindley.
Louisville, Ky.—Ahrens & Ott Mfg. Co., Samuel H. Moon.
Mansfield, O.—Humphryes Mfg. Co., F. F. Borchard.
Milwaukee, Wis.—F. R. Dengel Mfg. Co., F. R. Dengel; B. Hoffman Mfg. Co., Aug. Seelman; Rundle-Spence Mfg. Co., E. R. Spence; Wisconsin Plumbing & Heating Supply Co., Andrew Stue.
Minneapolis, Minn.—Central Supply Co., P. R. Frey; The D. M. Gilmore Co., J. P. Gilmore.
Muncie, Ind.—Geo. Keiser & Co.
New Orleans, La.—Manion & Co.
New York, N. Y.—American Sanitary Works, B. O. Tilden, W. A. Cawley; L. O. Koven & Bro., Wm. Schulmerich.
Omaha, Neb.—U. S. Supply Co., J. B. Rahm.
Peoria, Ill.—Kinsey & Mahler Co., Warren Kinsey.
Pittsburg, Pa.—Bailey-Farrel Mfg. Co., W. B. Bryor, Geo. H. Bailey; Iron City Sanitary Mfg. Co., C. F. Meyer; Kelly & Jones Co., L. C. Huckins; Pittsburgh Valve & Fittings Co., L. C. Selkregg; Wm. B. Scaife & Sons Co., F. W. Peters; Spang, Chalfant & Co., W. M. Thompson; Standard Sanitary Mfg. Co., John A. Noone; U. S. Sanitary Mfg. Co., John J. Plath.
Portsmouth, O.—Standard Supply Co., F. A. Ruhlman.
Quincy, Ill.—Modern Iron Works, Geo. J. Fisher.
Rockford, Ill.—Rockford Brass Works, J. H. Ryerson, D. E. Trahern.
Salt Lake City, Utah.—Joseph Nelson Supply Co.
St. Louis, Mo.—American Foundry & Mfg. Co.; John C. Kupferle Fdy. Co., W. C. Ehrhardt; Monument Plumbing Supply Co., Wm. Ivy, J. D. McGuire; N. O. Nelson Mfg. Co., A. B. Pierce.
St. Paul, Minn.—Crane & Ordway Co.; Cochran-Sargeant Co., M. N. Cochran; Union Brass & Metal Mfg. Co., E. J. Seitz.
Sioux Falls, S. D.—Plumbing Supply Co., C. D. Symms.
Steubenville, O.—LaBelle Iron Works, W. E. Watson, Hoyle Jones, A. E. Walker.
Sturgis, Mich.—Miller-Hubbard Mfg. Co., C. John Hanson.
Tiffin, O.—Great Western Pottery Co., G. C. Kalbfleisch, E. Willard.
Toledo, O.—American Plumbers Supply Co., F. W. Terwilliger, H. A. Schlingman.
Waukegan, Ill.—Northern Brass Mfg. Co., C. S. Johnson.
Wheeling, W. Va.—Trimble & Lutz Supply Co.; Wheeling San. Mfg. Co., F. W. Wheelock; Wheeling Steel & Iron Co., John Duncan.
Youngstown, O.—Youngstown Sheet & Tube Co., W. E. Manning, L. B. Jenks.

The Bastian-Morley Company, of Chicago, showed an interesting exhibit of its product, the Superior Gas Water Heater, at the Sherman Hotel, during the Central Supply Association meeting this week. The display was exceptionally interesting inasmuch as the Superior Heater is a new type, and demonstrations to show its efficiency caused it to be immediately recognized as a heater that will soon be in great demand.

GOVERNMENT NOLLE PROSSED CASES AGAINST BATH TUB MANUFACTURERS.

When the Government's case against manufacturers of sanitary ware in the United States District Court at Detroit, Michigan, was announced as closed on Tuesday of this week, Edwin P. Grosvenor, special assistant to Attorney-General Wickersham, moved that the case against five of the defendants be nolle prossed on account of lack of evidence.

Defendants whose cases were dropped are: C. H. Voegele, president of the Barnes Manufacturing Co., of Mansfield, O.; S. N. Ford, president of the Humphreys Manufacturing Co., of Mansfield, O.; Thomas Walker, president of McVey & Walker, of Braddock, Pa.; D. W. Davis, secretary of the National Sanitary Manufacturing Co., of New Jersey, and E. V. Brigham, secretary of the Union Sanitary Manufacturing Co., of Noblesville, Ind.

The action was made necessary by the ruling of the court that the price contracts entered into after June 6, 1910, were not admissible as evidence.

The same order was made in the case against J. A. Frauenheim, president of the Kerner Manufacturing Co.,

of Zelienople, who was put on the stand by the government, thus making him subject to immunity.

THE NATIONAL ASSOCIATION OF BRASS MANUFACTURERS TO MEET IN CHICAGO.

The National Association of Brass Manufacturers will hold its spring meeting at the La Salle Hotel, Chicago, on Tuesday and Wednesday, March 19 and 20, 1912, according to Commissioner Wm. M. Webster, who reports that all indications point to a well-attended meeting.

WILL MANUFACTURE PIPE-WRENCHES.

Billings & Spencer, of Hartford, Conn., have secured the rights to manufacture and sell the pipe-wrench invented and patented by J. F. Wright, of Canton, O.

PEERLESS HEATER CO. INCREASES ITS CAPITAL STOCK.

H. Edgar Gambrill, secretary of the Peerless Heater Co., with general offices in the Conestoga Bldg., Pittsburgh, Pa., announces that this company has increased its capital stock from $50,000 to $120,000.

NOW SOLE OWNER OF THE BOTTUM VALVE CO.

Geo. L. Bottum has purchased his partner H. O. Walker's interest in the Bottum Valve Co., 162 N. Dearborn St., Chicago. Mr. Bottum is now sole owner of the business and will continue under the same name as heretofore.

ANNUAL MEETING OF THE AMERICAN SANITARY MFG. CO.

The American Sanitary Manufacturing Co., of Abingdon, Ill., held its annual meeting in that city Friday, February 23rd. The old officers were re-elected and an increase in the capital stock from $60,000 to $120,000 was authorized.

WILL MANUFACTURE INSTANTANEOUS GAS WATER-HEATERS.

The Matchless Heater Co., of Holyoke, Mass., has been incorporated to manufacture instantaneous gas water-heaters. The officers of the company are: President, George C. Gill; vice-president, Peter S. Sinclair; treasurer, Gorham P. Hosmer.

WILL MANUFACTURE HEATING SPECIALTIES.

The Warden Heating & Supply Co., of Wellsburg, W. Va., has been incorporated with a capital stock of $25,000, to manufacture heating and ventilating specialties. The incorporations are W. J. Warden and C. D. Posey.

THE MARK-LALLY CO. EXPECTS A BUSY SEASON.

The Mark-Lally Co., San Francisco, Cal., reports business somewhat better at present than at this season last year. Its new line of gas engines is taking well with the trade, and the company is confident that the coming spring will show a decided revival in the plumbing and steam-fitting supply business. Owing to unforeseen contingencies, the work on its new building has not yet been actually started.

PERSONAL MENTION.

Thomas Kelly, of Thos. Kelly & Bros., has been spending a couple of weeks at Tampa, Fla., enjoying the Southern zephyrs.

* * *

W. E. Davis has recently become attached to the western sales department of the Kennedy Valve Manufacturing Co., of Elmira, N. Y. Mr. Davis will look after the concern's interests in the central western territory as assistant to Mr. W. E. Bradway, western sales manager.

* * *

E. W. Fisher, for the last twenty-one years at the head of the plumbing supply house bearing his name, in Cleveland, O., has accepted a position to represent the Never Split Seat Co., of Evansville, Ind., in Northern Ohio, Western Pennsylvania and Western New York. Mr. Fisher will make his headquarters at 401 Swetland Bldg., Cleveland, O.

* * *

W. J. Clark, who conducts a plumbing and heating contracting business under the name of Clark's Supply House, at Noblesville, Ind., was in Chicago this week buying supplies. He reported bright prospects for a busy season during the coming spring and summer. He has built up a nice business in the installation of water-supply systems in country homes.

* * *

P. K. Clayton, whose successful plumbing business is located at 1947 N. Western Ave., Chicago, has just returned from a most pleasant and enjoyable tour of the Southern States, during which he attended the Mardi Gras festivities at New Orleans, La. His only regret is that it prevented him from being present at the Chicago Master Plumbers' thirtieth anniversary celebration.

* * *

J. E. MacDonald, for eleven years with Doctor Franklin Morgan, has just accepted a position as city salesman with the Consolidated Engineering Co., of Chicago. In his new position Mr. MacDonald will devote his time to the sale of the Van Auken and the Thermo control systems of heating. His many years' experience in the heating business will no doubt make him a valuable addition to the sales force of the Consolidated Engineering Co.

* * *

Thomas Tait, of Moline, Ill., was admitted to membership in the British Institution of Heating and Ventilating Engineers at its February meeting held in London, England. Mr. Tait is the fifth American heating engineer to be honored in this manner. He is also a member of the American Society of Heating and Ventilating Engineers, the American Society of Inspectors of Plumbing and Sanitary Engineers, and the American Society of Engineer Draftsmen. Mr. Tait's practical experience covers a period of twenty-five years in different parts of the United States, and he is now connected with the Moline Vacuum-Vapor Heating Co., of Moline, Ill., as engineer and chief draftsman.

EDWARD E. FOX WINS PROMOTION.

The McCrum-Howell Co., of New York and Chicago, announces that Mr. Edward E. Fox has been appointed manager of the New York department of the concern. This appointment took effect March first. Mr. Fox is one of the company's earliest employees, having been in its service since the organization of the company some ten years ago.

HAYES MANUFACTURING CO'S. PLANT DESTROYED BY FIRE.

The plant of the Hayes Manufacturing Co., manufacturers of copper range boilers, Paterson, N. J., was completely destroyed by fire on February 19. Reconstruction of the factory has already been started and the concern announces that, barring bad weather conditions, they will be in a position to resume boiler shipments within thirty days. With the reconstruction of the factory, new machinery and appliances will be added to facilitate the manufacture of this concern's well known products.

STREET & KENT PLANT RECONSTRUCTED.

The Street & Kent Manufacturing Co., 549 Fulton St., Chicago, manufacturers of plumbers' brass goods and specialties, have reconstructed their entire plant since its partial destruction by fire on December 23 last. The factory is now in full operation and the reconstruction has increased the production-possibilities materially.

Street & Kent recently announced to the trade that the new plant is "stronger and better than ever" and that all orders for their products can now be filled to far better advantage than heretofore.

HOME FOLD OF THE UNITED BUNCH OF SHEEP ELECTS OFFICERS FOR 1912.

The annual meeting of the Milwaukee Home Fold, No. 1, of the United Bunch of Sheep, held recently, resulted in the election of the following officers: Grand Ram, J. F. Wulf; vice-grand ram, F. H. Meadows; shepherd, James E. Brady; chief shearer, H. F. Klug; keeper of the golden fleece, F. C. Wagner; director for three years, F. E. Young. The order, founded in Milwaukee about three years ago, is made up of traveling men in the plumbing and heating trades and now has branches all over the country.

THE NATIONAL SUPPLY CO. ENTERTAINS MASTER STEAMFITTERS.

H. S. Gardner, manager of the heating department of the National Supply Co., of Toledo, O., entertained the master steamfitters of that city with an excursion to Detroit, Mich., on Tuesday, February twentieth. Mr. Gardner chartered a special car which carried the party, consisting of thirty-nine gentlemen, to Detroit in the morning and brought them back to Toledo late in the evening. The party visited the plant of the American Radiator Co., where it was served with a warm lunch. The day was brought to a close with a banquet at the Cadillac Hotel in Detroit.

CHANGES IN THE TRAVELING FORCE OF THE LEADER IRON WORKS.

B. F. Templeton, who for more than a year has had charge of the correspondence in the office of the Leader Works, at 1211 Monadnock Block, Chicago, has taken a position as traveler out of the Owego, N. Y., office of the company. He will cover portions of New York and Pennsylvania, calling on the plumbing trade in the interest of Leader water systems. S. B. Williams, who last year called on the trade in Ohio and Southern Michigan, will this year take care of a portion of the trade in Southern Wisconsin, Northern Illinois, and part of Michigan, assisting R. C. Burmood, manager of the Chicago office of the company.

NEW YORK CHAPTER COMPILING ENGINEERS' LIST.

Assistance from any authentic source is sought by the New York Chapter of the American Society of Heating and Ventilating Engineers which is endeavoring to compile a list of the consulting heating and ventilating engineers throughout the country. Those who are engaged in consulting engineering work are requested to send their correct address to Joseph Graham, secretary, 154 Nassau street, New York City. Those who know such men are requested to give their aid to the work by sending the information desired to the secretary with the further information of their particular field if they specialize in any one branch.

THE PEERLESS PACIFIC CO. INCREASE CAPITALIZATION.

The Peerless Pacific Co., of Portland, Ore., started as a jobbing business in that city about a year ago and has already outgrown its original quarters, and recently moved into a more commodious building at 6 and 8 N. Front St.

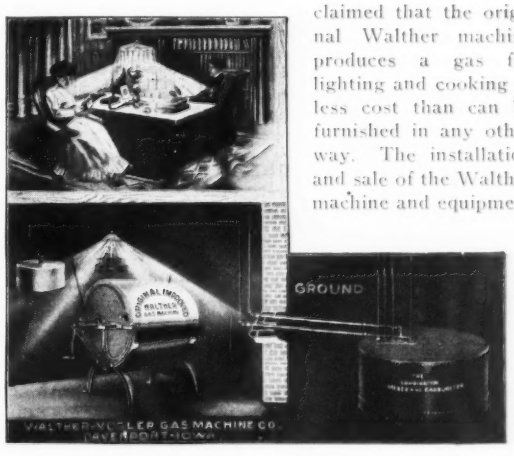
At the recent annual election of officers, the capital stock of the concern was increased from ten thousand to seventy-five thousand dollars. The new officers elected for this year at the annual meeting, are:

W. F. Weaver, president and secretary; M. D. Helfrich, treasurer; and George R. Smith, vice-president.

The first year's business of the Peerless Pacific Co. indicates the aggressiveness of this new concern in the jobbing of plumbing supplies.

PRIVATE GAS PLANTS BY THE WALTHER SYSTEM.

The Walther-Vogler Gas Machine Co., of Davenport, Ia., are calling attention of the plumbing trade to the original Walther system of private gas plants for lighting and cooking. It is claimed that the original Walther machine produces a gas for lighting and cooking at less cost than can be furnished in any other way. The installation and sale of the Walther machine and equipment



The Walther Private Gas System Installed.

is an innovation in connection with heating and lighting systems for suburban and country homes, which should prove highly profitable to the plumbing and gas-fitting trade. The machine and equipment is manufactured with the full realization of an increasing demand for equipments of this kind.

A SPECIAL EQUIPMENT FOR LIGHTING FARM BUILDINGS.

Monmouth Acetylene-Electric Manufacturing Co., Monmouth, Ill., are manufacturing an equipment for lighting farm buildings which disposes of all old-time methods of lighting service in urban buildings. Catalog and circulars of the Monmouth Acetylene-Electric Manufacturing Co. shows the necessary devices comprising such equipment, and also shows the advantages of the apparatus and simplicity of installation. It is obvious that installations of this equipment should prove a source for profit to the plumbing and gas-fitting trade.

DISTINCTIVE FEATURES OF THE "MARVEL" THERMOSTAT.

The American Thermostat Co., Elmira, N. Y., have issued a circular to the heating and ventilating trade calling attention to the distinctive features of their product —"Marvel" Thermostat.

The clock attachment connection with the Marvel automatic electric motor constitutes the American Thermostat Co's. claim to superiority for their temperature regulators. A feature for convenience offered by the "Marvel" thermostat is the clock arrangement for automatic reduction of the temperature during the night; and the device which automatically opens the draft at a set time, raising the temperature to maximum degrees. It is also claimed that the "Marvel" thermostat will eliminate all clinkers and reduce the ash to a powder, thus insuring full heating value from fuel.

BLAKE SPECIALTY CO. ISSUE LOOSE-LEAF CATALOG 1912.

Blake Specialty Co., of Rock Island, Ill., manufacturers of plumbers special drainage and water fittings, have placed before the trade their catalog "D" for 1912.

The new Blake catalog is of the loose-leaf type, designed to make possible the addition of new pages that may be required throughout the year for further descriptive matter of the company's output.

Through the arrangement of this new catalog, the Blake Specialty Co. show a desire to be of assistance to the trade in every manner possible. The catalog at a glance conveys the impression that this manufacturer concern is constantly devising new methods and systems in accordance with the most recent development of sanitary and mechanical principles.

The recent completion of their new factory makes possible a better service in supplying their patrons with the quality goods which they manufacture.

NEW TRADE LITERATURE.

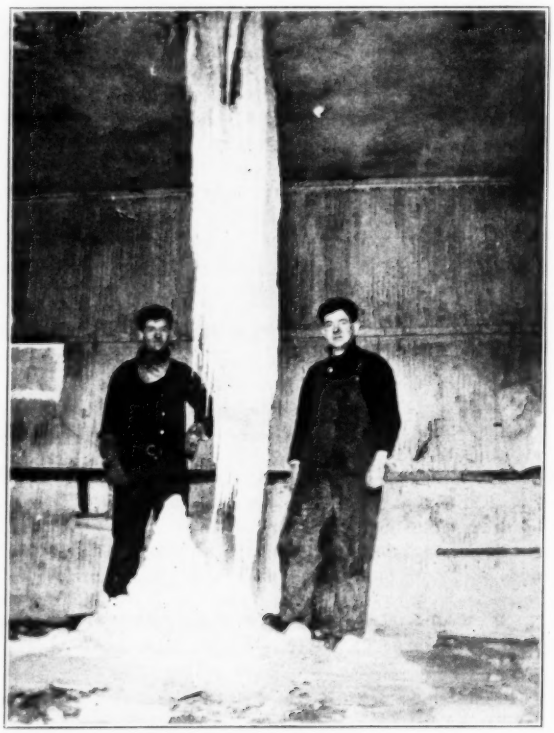
R. H. Van Buren, of the Morency-Van Buren Manufacturing Co., of Sturgis, Michigan, while attending the Central Supply Association meeting in Chicago this week, announced that the Morency-Van Buren Company would have a catalog ready for distribution to closet-seat and tank manufacturers within the next thirty days. This catalog will show their complete line of brass fittings and plumbers' specialties. Mr. Van Buren also reports that the Morency-Van Buren Co.'s business is increasing and that they anticipate a very prosperous year.

Kennett, Cal.—Leonard & Son have moved their plumbing shop into the Smithson building.

AN "ISOLATED" PLUMBING JOB.

James P. Dragoo, plumber and steam-fitter of Muncie, Ind., describes one of his many difficult jobs of the past winter, resulting from extreme cold weather effects on plumbing installations, as an "Isolated" operation.

The accompanying illustration shows a plumbing operation in a vacant room of a business building. The occupants of the apartment vacated the premises on a cold afternoon and in vacating, held a prejudice against the landlord which they thought could be satisfied by permitting bath-tub faucets to be left open. The overflow of water from the bath room traveled across several rooms



A Recent Job of Plumbing Repair Work Where Considerable Thawing Was Required.

of the vacated apartment before breaking through the floor and causing the icicle shown in the illustration, and the overflow of water gradually froze from the first floor of the building back to the bath room, leaving a six-inch layer of ice over its entire route from the bath room to main floor of building. The freezing of the overflow caused all water supply pipes to burst and practically ruined the entire plumbing equipment of the building. The icicle shown in the illustration measured twenty-two inches in diameter from ceiling to shoulders of workmen standing on either side.

This "Isolated" job of plumbing repairs, Mr. Dragoo describes as the worst that he has been confronted with in an experience in the business of twenty-two years.

Mike—Say, Dennis, phat's a ventriloquist?

Dennis—He's a mon phat stands at one side ov the room and talks to himself from the other.

"What in the world possesses a well educated young woman to leave a good home and elope with a coachman?"

"I guess she wants the world to know that the family was able to afford a coachman."

Necessity for a State Bureau of Plumbing for Illinois

Essay by Jas. J. Wade, Chicago, Read at the Recent Convention of the Illinois State Association of Master Plumbers, Held in Decatur, Ill.

I trust you will not consider it out of place if I give you a brief history of the laws which govern plumbing and drainage in this state, laws which have given authority to cities of fifty thousand inhabitants and over, to pass ordinances regulating plumbing, drainage and other sanitary conditions of buildings.

Priority in Plumbing Laws.

Until 1881, no state had passed any laws governing plumbing. It was in this year that Illinois led the way for her sister states by passing a law for the regulation of plumbing, drainage, ventilation, lighting, etc., of buildings. In 1883 there was established, under this law, the first sanitary bureau, consisting of only three members, namely: Dr. Oscar DeWolf, commissioner of health; Wm. H. Genung, chief of the bureau of tenement houses and factory inspectors, and Wm. Dillon, sanitary plumbing inspector.

This small bureau of 1883 began its first year's work by compelling owners of buildings to repair defective plumbing and drainage in nearly fourteen hundred structures. It was a source of great pleasure and pride to me that twenty-eight years ago I should be instrumental in the appointment of Mr. Dillon as the first inspector of plumbing in the city of Chicago. Mr. Dillon at that time was a journeyman plumber, and a better representative I never knew. He remained active in the bureau until two years ago, retiring with honor and renown.

Mr. Genung came from the ranks of the journeyman carpenters, afterward from the master carpenters, and was the originator of the first law governing plumbing and drainage in this state, which was passed by the legislature in 1881. He was also the author of the revised statute of 1889. Dr. DeWolf was selected from the body of the medical fraternity, and a more skillful scientist never lived.

History of Chicago Plumbing Ordinance.

Now comes the history of the ordinances governing plumbing and drainage in Chicago, in compliance with the state law of 1881. The first city ordinance governing plumbing was passed by the common council in 1885. The framers of this ordinance consisted of two journeymen plumbers, P. Burke and T. Barrows, representing the Journeymen Plumbers' Association, and James J. Wade, representing the Master Plumbers' Association. That these ordinances stood the test is proven by the fact that almost all of the provisions, with few amendments, govern the plumbing and drainage of the great city of Chicago today. It has also served as the nucleus of similar ordinances governing plumbing and drainage in all great cities and towns. From these small mustard seeds, which were planted by men of common knowledge, by mechanics without great learning in the science of books or college lore, sprung the greatest sanitary plumbing and drainage bureau in the world, now under the jurisdiction of the most efficient and most technical trained sanitary scientists of this or any other age, namely: Dr. C. B. Young, commissioner of health; Chas. B. Ball, chief sanitary inspector; Thos. J. Claffy, assistant chief sanitary inspector; and the expert sanitary plumbing inspectors under their charge. Through the earnest, honest efforts of this bureau to serve the common interests of the people, Chicago, with its two and one-half million inhabitants is today the most healthful city on the globe.

Necessity for State Law.

I have given a brief history of the sanitary plumbing bureau of Chicago. Why, I ask, should not the great state of Illinois establish a code of laws governing plumbing and drainage in the dwellings, factories, and other structures in its town, villages or farms? Is there any reason why plumbing and drainage in the buildings erected in the small towns and villages and upon the farms should not be installed with as much care and precaution as to its sanitation as that in our great western metropolis?

To the above mentioned men and the plumbers of Chicago the credit belongs for establishing this plumbing bureau in this city, and the hope exists that a similar bureau may be established in this state, so that the town and farm buildings of Illinois may also participate in the proud glory of making our own state of Illinois a country where men, women and children enjoy all the blessings of health, strength and prosperity—an example to point to and speak of with pride, and I trust the plumbers of Illinois will succeed in their grand efforts to make it so.

Necessity for Country Plumbing Regulations.

I will relate to you today some of the insanitary conditions which prevail in the country towns and farms, and which the state sanitary plumbing bureau (should this bureau be established) will use every effort to remedy. Many living in large cities are led to believe that the word "country" is synonymous with mental and physical health. The town-pump and farm-house well are regarded as possessing qualities obtained only in the fountain of youth. The air in the country is presumed to be absolutely pure, and many expect to find in sunny meadows and woods and dells all the conditions most favorable to health, happiness and length of days. Country food as served in farm-houses is regarded as superior to drugs for the prevention of disease. People believe that most of the deaths in the rural districts rarely come from sins against nature, but result from lightning, mowing machine accidents or old age.

Opinions, however, about the hopefulness and healthfulness of farm-life and its allurements have undergone a great change during the past few years. Physicians who have practiced in country and towns declare that the death-rate is larger and the causes of sickness are more numerous proportionally in the former than in the latter. They state that all kinds of malarial diseases prevail in the country much more generally than in the city, and that dyspepsia, which is generally supposed to result from high living, is more common among the persons who live and work on farms than among people of leisure in the city. It has been affirmed that the largest class of patients in our insane hospitals is composed of the wives of farmers. In short, there is strong evidence that a higher degree of both bodily and mental health exists among city people than among country residents. A physician of

large experience in this city states that his services are always in active demand during the fall by those people who have spent a considerable portion of the summer in the country. They contract diseases there and come home to obtain relief. They were disappointed about finding healing waters and purifying air.

Impurity of Country Water.

Since the time the song of "The Old Oaken Bucket" was written, and perhaps for centuries, people have believed that the open well, as found in the vicinity of most farm-houses, supplied water the purest and sweetest that nature can yield. It is true that nearly all nature's springs and many wells afford excellent water for drinking and culinary purposes. But it is also true that a very large proportion of the water consumed in the country is very bad. It would not be tolerated for supplying the inhabitants of a large city. In some cases it is taken

Jas. J. Wade, Chicago.

from streams that contain all sorts of vegetable and animal pollutions. In very many instances the water that falls from the roofs of buildings is conveyed through dirty troughs into wooden cisterns, where it is stored for the use of the family, thereby harboring all the impurities of the air, as well as those of the roof, in the troughs and in the cistern itself. What is worse, it is constantly accumulating impurities in the place where it is stored. It becomes more putrid the longer it is kept. No filter, however good, could remove all the foreign substances it contains. It has a disagreeable color, flavor and smell. One long accustomed to the use of this water may not notice these imperfections, but they are apparent to persons who are in the habit of using water that is comparatively good.

Most wells that afford excellent drinking-water are so carelessly managed that they become reservoirs of filth. Vegetable matter of various sorts flows into them and becomes decomposed. Small animals and vermin fall into the wells and die, and, as their decomposition is slow, their presence is not apparent for many months. When a farm-well is cleaned out, the beholder is generally nauseated at the mass of corruption taken from it. Many wells are so situated that the filth of the barnyard, the pig-sty, and even the privy itself, finds its way into them. The liquid from these places must flow somewhere, and, as the well is the nearest outlet for drainage, it passes into it through the porous soil. Surface-water, after heavy rains, frequently flows into the wells.

Surface, or open, and underground drains, are usually constructed on farms for the purpose of rendering soil more suitable for the production of crops. But it is extremely rare to find any drainage system undertaken for sanitary advantages. The water that flows from the fields is often allowed to accumulate in pools within a short distance of the house. There is nothing resembling a sewer in connection with the house, or the lot on which it stands. The water from the sink, as well as that in which the family washing is done and all that employed in culinary operations, generally finds its way to the soil about the house. This soil becomes saturated with filth. It becomes full of the seeds of disease, which are ready to germinate as soon as the conditions are favorable. During the heat of summer deadly vapors rise from it, which are likely to pervade every room in the dwelling occupied by the family. In every direction there are pools from which water only passes by the process of evaporation. There are also sluggish streams that have no perceptible current, except when the water is high. All of these are nurseries of malaria.

The purity of the air in the country, like that of the water, is generally greatly overestimated. Many of the bad odors are disguised by the perfumes of apple and clover blossoms and numerous wild flowers. The vilest of odors are constantly rising from manure-heaps and privies from the yards of barns and stables, and the inclosures where swine and poultry are kept. Animals and fowl that die on farms, in the highway or on land that is not enclosed, frequently remain for weeks without being buried, for the reason that there is no person employed to dispose of them. Many vegetables, like cabbages, potatoes and fruits are left to decompose on the ground.

The cellars under most farm-houses are breeders of poisonous vapors which ascend through the doors and cracks and enter every room in the dwelling. Country houses generally have no other means of ventilation than that afforded by the doors and windows, and the air in them is vitiated by the vapors that rise from the wash-boiler and the food that is being cooked. Not one farm-house in a thousand contains a bathroom supplied with hot and cold water.

Need for Sanitary Plumbing in Farm-Houses.

Labor, as conducted on farms and in farm-houses, is not conducive to health. The work required in the field during summer is very hard, and is attended by almost constant exposure to the heat of the sun. During the season of haying and harvesting all work requires speed and entails a certain amount of confusion. The rest that farmers receive is chiefly at the time when they cannot work out-of-doors. They are idle for so long a period that it ceases to be enjoyable. They long for spring to

come, as it affords occupation for the mind and hands. As to the women who live on farms, they have no practical appreciation of rest. Their employment is drudgery. They have no amusements and a few social opportunities. The food consumed in farm-houses is not generally conducive to health. It lacks variety, being principally composed of salt and smoked meats and dried fish. Most farmers have nothing but an apology for a vegetable or fruit-garden. An ice-house or a fish-pond on a farm is very rarely found.

The sanitary condition of farms therefore demand more attention, especially when the settlers have the means and the desire to make suitable improvements. There should be sanitary plumbing and drainage for health, as well as for profit. The water-supply should be improved by the introduction of means for bringing it from springs and lakes, and carrying it where it is required in every house. Stringent measures should be adopted in disposing of manure, privies, dead animals and decomposing vegetation. The matter of ventilating dwellings and cellars should receive more attention. When heed is paid to all these things, the death-rate in the country will be lessened, and the general health of the people improved.

When one pauses and reflects that these are the real conditions as they exist in the country, the necessity for a state plumbing bureau becomes apparent. If the master and journeyman plumbers of Chicago were able to secure a law in the state legislature governing plumbing and drainage in towns of fifty thousand inhabitants and over, with power to create a plumbing bureau and ordinance regulating plumbing and the examination of plumbers in each town—if this was possible in 1881 and later years—then, I say, it is possible to create a similar plumbing bureau and code for the whole state. Therefore, we must act with this principle in view: That a state plumbing bureau shall be founded, free from and without any alliance with the state board of health, and if successful in this laudable effort the state of Illinois will have the proud distinction of establishing the first state plumbing bureau and code in the United States, as it had the honor of passing the first plumbing and drainage law in 1881.

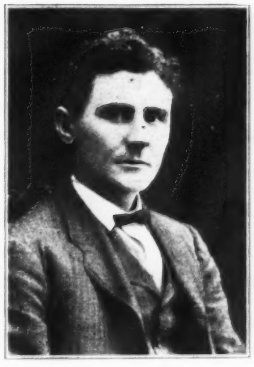
Work of Proposed Bureau.

This bureau would then control the sanitary construction of plumbing and drainage in houses and buildings in the state, and thus the farm-houses and dwellings in the towns and villages belonging to the middle and poorer classes would be surrounded with as sanitary conditions as are found in the homes of the rich. It is indeed more essential that these classes should be better provided with sanitary surroundings, for it is upon their health and strength that the welfare, happiness, prosperity and contentment of our beloved country depends. The United States is the natural, free and sanitary country for the human race to dwell in health, happiness and prosperity, since every desirable citizen is interested in its government and its welfare. Wheresoever the stars and stripes are unfurled you will find a free and ambitious people. There you will find the hand of God, the Great Master, who governs all and sees and hears all, who aids all who place their confidence in Him. He tells us to love our neighbors as ourselves; therefore, the people of this great Christian state of Illinois must necessarily pass laws and ordinances which will preserve the health of all, and surely correct plumbing and drainage prevent disease and preserve the life, health and welfare of humanity.

I have stated that this plumbing bureau should not be allied with the state board of health. I am opposed to this alliance for this reason: The state board of health has been established for the cure of disease; our plumbing bureau will be founded for the prevention of disease, and should be composed of men who know, by practical experience, what constitutes sanitary plumbing, drainage and sources from which is provided the water we drink. While it is not my desire to cast any reflection upon the physicians of this or any other state, or upon the state board of health, nevertheless, I wish to point out that they have not taken any interest in the sanitary construction of plumbing or drainage in Illinois or in any other state of the union. It was left to the plumbers of this nation to establish plumbing and drainage bureaus in our large, cosmopolitan cities as well as in many less populous towns.

Therefore, the master plumbers of Illinois, in their convention at Decatur, Ill., on January 24 and 25, 1912, should resolve to go to the state legislature with an act providing for the sanitary construction of plumbing in every building in this state. Illinois was the first state in the union to pass a law (1881) regulating plumbing and drainage in cities of fifty thousand and over. Let it now be the first state in the union to pass a law governing the construction of plumbing and drainage in every home and building, whether on farm, in town or in city, in the state of Illinois.

New Officers of Missouri Master Plumbers' Association.



E. C. C. Reisel, St. Louis, President.

G. A. Wood, Springfield, Vice-President.

RECENT INCORPORATIONS.

Bayonne, N. J.—The National Plumbing Supply Co., capital $15,000, has been incorporated by Moses Goldman and Joseph Jordan. The new firm will be located at 569 Avenue C.

Canton, O.—James H. Shorthill, Wm. Schwing, George Edel, Albert Kauffman and Joseph Kauffman, have formed a company to be known as the Shorthill Plumbing Co., to conduct a general plumbing, heating and lighting business. The capital stock is announced as $15,000.

Detroit, Mich.—The City Plumbing Co., with a capital of $15,000, is a recent incorporation.

Wilmington, Del.—The Adams Plumbing Co. has been incorporated by H. S. Adams, C. R. Mudge and W. E. Stover, to do a general plumbing and fitting business, with a capital of $100,000.

QUESTIONS AND ANSWERS

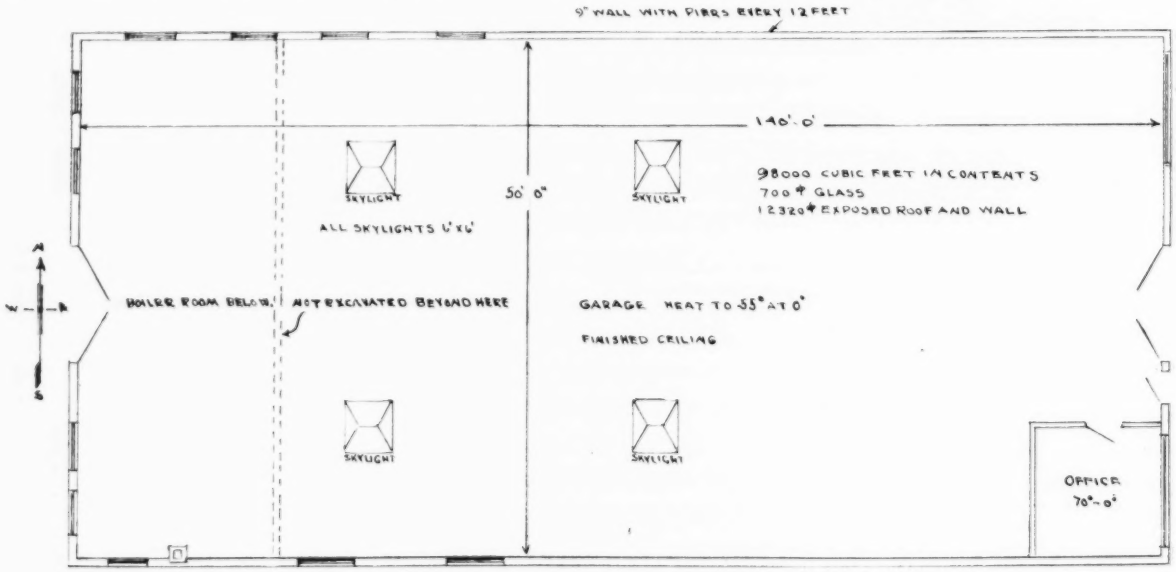
HEATING A GARAGE.

Editor "Domestic Engineering":—Kindly permit me to ask you for a little information about the heating of a garage. I enclose a rough pencil sketch to give you an idea of same.

I wish to know about the size of boiler required and the number of feet of 1¼-in. pipe, according to your best judgment, to heat same. The office, 16 ft. square, is to be heated to 70 deg.; the balance to 55 deg., in zero weather.

I would also like to know something about the fuel-consumption under the following conditions: The building being built closed in on frozen ground, how much fuel should it require under this condition to keep steam on plant each 24 hours at zero weather, assuming that there is 1,600 ft. of 1¼-in. pipe in building for radiating purposes? The fuel is to be western coal, Colorado, which is of a soft grade; fir, or tamarack wood.

Kalispell. D. H.



Plan for Heating System in a Garage.

Assuming that you desire to use a low-pressure system of steam-heating, it will require about 1,000 sq. ft. of surface to heat the garage proper to a temperature of 55 deg., and 85 sq. ft. to heat the office to 70 deg., with outside temperature at zero. We advise you to use 1½-in. pipe instead of 1¼-in., as you will get better results, due to the length of coils and ability to handle condensation to better advantage. The coils will give best results if placed along the walls near the floor, but if they must be placed on the ceiling, add at least 15 per cent to the surface required. We see no reason, however, why they cannot be placed along the walls, if the boiler-room is below the first floor, which we understand from your sketch.

If the coils are placed along the walls, a boiler of the proper type will require approximately 10 sq. ft. of grate-area to carry the load, about six sections long, with approximate width of grate 30 in. and a 12-in. smoke-pipe. Short flue-travel will give best results with the fuel you mention. The flue, assuming 35 ft. from the grates to the top, should be 12x16. It is easier to check a good draft than to help a poor one. There are too many conditons to be taken into account for us to venture an opinion on the amount of fuel that will be required.

EVAPORATION FROM BROOKS AND PONDS.

Editor "Domestic Engineering":—Kindly give formula for estimating evaporation of water of brooks and ponds, and give example of how it is worked out.

Give constants for the different temperatures, if such there be.

Port Henry. B. T. J.

Your inquiry hardly comes under the heading of matters pertaining to heating, ventilation and sanitation, but we will endeavor to give you some idea of the results of tests.

Experiments at the Mount Hope Reservoir, Rochester, N. Y., in 1891, give the following data on the evaporation of water in reservoirs:

	July	Aug.	Sept.	Oct.
Mean temp. of air in shade	70.5	70.3	68.7	53.3
Mean temp. of water in reservoir	68.2	70.2	66.1	54.4
Mean humidity of air, per cent	67.0	74.6	75.2	74.7
Evaporation in inches during month	5.59	4.93	4.05	3.23
Rainfall in inches during month	3.44	2.95	1.44	2.16

Experiments from 1881 to 1885 in Tulare County, Cal., showed an evaporation from a pan in the river equal to an average depth of ⅛-in. per day throughout the year.

When the pan was in the air the average evaporation was less than 3/16-in. per day. The average for the month of August was 1/3-in. per day, and for March and April 1/12-in. per day. Experiments in Colorado show that evaporation ranges from .088 to .16-in. per day during the irrigating season.

In northern Italy the evaporation was from 1/12 to 1/9-in. per day, while in the south, under the influence of hot winds, it was from 1/6 to 1/5-in. per day.

In the hot season in northern India, with a decidedly hot wind blowing, the average evaporation was ½-in. per day. The evaporation increases with the temperature of the water.

PIPING A CENTRAL STATION HEATING JOB.

Editor "Domestic Engineering":—As a subscriber to your paper, we would like to have your idea as to whether the two heating jobs described below have been put in properly. These heating jobs have been connected up with the pipes of the central heating plant hot-water system—one-pipe circuit—under about 40-lb. pressure. We make our connections to the same by two long radius tees, and consider that the same are put in properly when we have them about 18 ft. apart, as shown on the sketches.

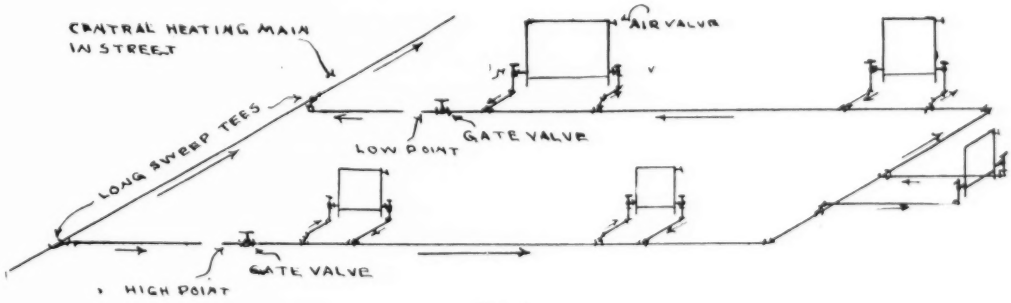


Fig. 1.

The heating job shown in Fig. 1, has a 2-in. flow and a 2-in. return to the main in the street, with about a 6-ft. spread. These mains have been put in quite a while. The water comes in the flow as warm as any connections in the city and goes out of the return with the heat very near all taken out of the water. The last radiators on the circuit would, of course, get cold water. We claim the only remedy is to put in 2½-in. or even 3-in. street-connections, about 18 ft. apart.

A heating engineer who went over this job thought it was okay. The local company is putting in a new power-house and larger mains, and the heating engineer superintending the work says that the pipes are pitched the wrong way. Our idea has always been that the high point should be the place where the warmest water is or, if running an attic main where no cold water enters the mains, the highest point would be about the middle of the run. The highest point on this job is where we enter the building with the flow and then start pitching down, because each radiator will cool off the water to a certain extent and mix with the warm water in the main, this, of course, cooling off the whole body. This heating engineer claims that the highest point should be just as we are ready to enter the return out of the building, and if the pipe were pitched this way he would be willing to garantee that every radiator would get warm, because the pull would be so great on the flow that it would pull in enough water to heat the system. This is a job which we remodeled when the building was enlarged. The pipes were originally pitched the way we have them at the present time and worked perfectly, but with about half the radiation.

Fig. 2 shows the plan that this heating engineer would use in putting in this job. Fig. 3 shows an overhead main which he also condemns as wrong. At the ceiling over the stage and below the stage a twin-ell has been used so that we run on both sides of the room. The sketch only shows one-half of the system, but gives you the idea of how the job has been put in.

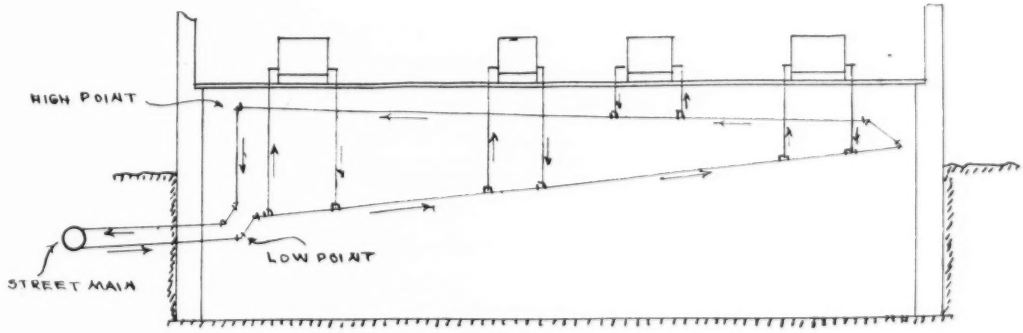


Fig. 2.

The radiators in front are placed on the return so that

there will be no question about them getting all the heat possible. The radiator on the wall has been put in with a valve so that the same cannot short-circuit more than what is necessary to keep this radiator properly warmed up.

This engineer also condemns our top and bottom connections on all radiation using the central heat, as a corner under the top connection (numbered A on the radiator on the wall) he claims has very little or no circulation and for that reason gets practically no benefit out of part of our radiation. This, according to our experience, has been proven to be wrong, as these radiators heat up as good as the rest.

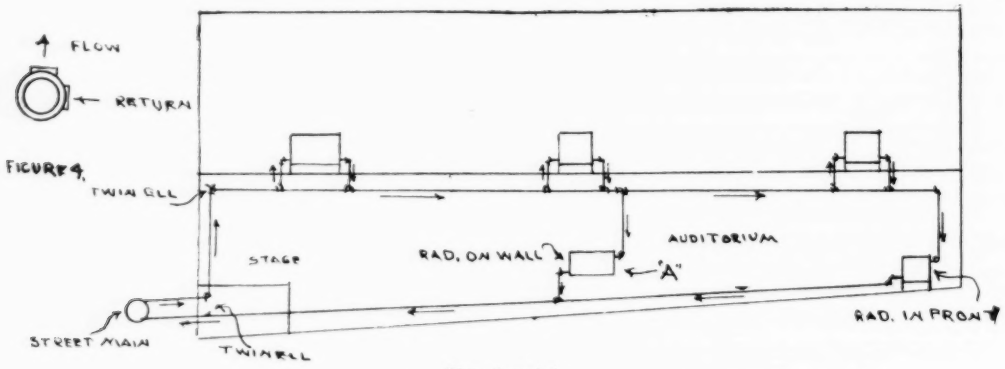
Fig. 4 shows the way we make our connections on our mains in the basement or ceiling as the case may be, showing that we take the flow out of the top of the pipe and bring the return in the side. We have talked with other constructors in our line and they have agreed with us, but we may have an argument with our customers and also with the heating company claiming that we have not done our work properly, so as you have men which are authority on subjects of this kind we would like to have your ideas on these jobs, so that we have something else besides our own ideas to convince the people that have condemned these jobs, and if we should happen to be wrong we would like to know the same so it will save us grief on our future jobs.

Minneapolis. R. E. X.

We see no reason why a job installed as shown in Fig. 1 should not operate successfully. It is simply a matter of care and judgment, and getting the proper size pipes. It is presumed that the incoming service-pipe from the street-main will rise to the basement-ceiling and pitch down to where the return leaves the building. Valves should always be placed on both the service-pipes. The radiator-branches will be taken off as shown in Fig. 4, and of practically the same size as on a gravity job. This applies to what is commercially known as the "circuit system," of which Fig. 1 is an illustration. J. D. radiator-valves should be put on both the supply and return ends of each radiator to enable repairs to be made if needed without interfering with the rest of the system. Not knowing the radiator-sizes makes this difficult to answer correctly.

Fig. 2 will work if the flow is taken from the top of the street-main instead of the bottom as shown, to avoid taking the cooler water from the street-main into the building. While it is true that you can almost run the piping without regard to the pitch, you will get better results by grading the piping in a downward direction to the return-pipe. It seems to us if the water is forced from the central plant, the question of "pull" and "push" is about six of one and half-a-dozen of the other.

Fig. 3 should work very well, due care being taken to see that no short-circuit takes place through radiator at point A. A valve in the supply to this radiator will enable you to control the water to the required amount. Valves should be omitted on the front radiators where they act as an enlarged continuation of the circuit. It is assumed that the air in the system is being properly taken care of.



Figs. 3 and 4.

The proper working of any system of heating depends largely upon the judgment used in its installation, always bearing in mind that practical experience enables one to speak with authority. The man who has burned his fingers can describe the sensation more accurately than one who has yet to burn them.

Fig. 4 is all right, and the return-opening in the main should be from 6 ft. to 8 ft. further along the return-end of the main than the flow-opening. This will give a better circulation, as the circulation in the radiator depends largely on itself, while that in the main is produced directly by the action of the pump.

Without further data, we cannot give a more definite answer, but if we have not covered the points upon which you desire information, we shall be glad to have you write us again with more details.

WALTMASONIZED.

What's this ails our winter scribe? We see no wheeze nor e'en a jibe regarding the merry plumber's bill. Please don't explain the joke-smith's ill. Useful for many a thousand years, this most witty subject would appear to be losing its rarely flavored zest, though long the scissor-pusher's best. Did some weary reader finally take the paster of this ancient fake, and put him where he could and must thaw pipes and traps before they bust, and make him live on the net proceeds of his easy money for daring deeds? Here's R. I. P. to our old-time friend, a sacrifice to a truthful trend.

(Editorial Note.—We were surprised to receive this gem from this valued contributer as our latest, by wireless, stated he was still on the water wagon.)

F. A. Clegg & Co. of Louisville, Ky., just closed a contract for heating the Ideal Theater in that city with a Moline system.

News of the Plumbing and Heating Contractors

Reports of the Week from Many Different Cities Show Both Business and Personal Activity in the Trade

NEWS FROM NEW ENGLAND.

Massachusetts.

Malden.—Cards have been issued announcing the marriage of Edwin Troland, former president of the Malden Board of Trade and a leading master plumber of the city, to Miss Ethel Marion Gilmore of this city. The wedding took place at the home of the bride's parents in Brewer, Me. The engagement was announced some time ago but the marriage at this time came as a complete surprise to Mr. Troland's friends. The couple will reside at 11 Beltran street, Malden.

Lawrence.—William H. Forbes, a member of the plumbing firm of Forbes & Sons, is on a six-weeks cruise along the Atlantic coast and to Cuba. He is a member of a party of five hundred who have chartered one of the Cunard steamers.

Holyoke.—Plumbing Inspector Frank L. Avery has received instructions from the board of health to make a thorough inspection of the plumbing in all of the business blocks along High street from Hampden to Essex streets, and a majority of the saloons of the city. This, it is understood, is but the beginning of a campaign against unsanitary plumbing which is to be made under the direction of the city authorities.

Medway.—The contract for heating and ventilating the new Sanford Hall block has been awarded to Horace W. Hosie of Franklin.

Pittsfield.—Noble, Milne & Co., plumbers and steamfitters, are negotiating for the purchase of the so-called Butler estate on the corner of First and Fenn streets, with a view to erecting thereon a first-class building for their own occupancy.

Worcester.—Worcester master plumbers have started a movement seeking representation on the board of health. The plumbers contend that since the health board issues plumbing licenses and otherwise controls activities in that line, one member of the board should be a practical plumber.

Turners Falls.—Schlegel & Kennedy, who have conducted their plumbing business in the Godin block on Second street in the past, have bought the stock and business of M. A. Ward, and are soon to move into Ward's former quarters on Third street. The change will give Schlegel & Kennedy more room and a better opportunity to serve their increasing clientele.

Exeter.—The contract for heating the new high school building has been awarded to Nichols & Drowne, of Boston and Lynn, Mass. They will also have charge of the installation of a ventilating system which calls for a complete change of air every sixteen minutes.

Connecticut.

Hartford.—Articles of incorporation have been filed with the secretary of state by which the plumbing business now conducted in Southington by W. S. Gould and his son, W. J. Gould, is taken over by the Gould Company. Ernest H. Bancroft and James F. McPartland become part owners of the concern. The authorized capital of the new company is $50,000, of which $20,000 has been paid in.

Cheshire.—The Plainville Hardware Co. has a contract to install a heating system in the new house being erected for Mrs. Emily Johnson. The house is to be occupied by Mrs. Johnson, and will be fitted up with all modern improvements.

Bridgeport.—The contract for the plumbing and heating in the two-family house which is being erected in Fairfield for Mrs. Margaret Warwick has been placed with Carlson & Benson. The same concern also has the contract for plumbing a new building which is being erected at the corner of State street and Clinton avenue for Adolph Sherman.

Maine.

Portland.—A certificate of incorporation has been issued to the H. E. Davis Company of this city, the concern to carry on a general plumbing business. Harry E. Davis is president, Frank A. Davis treasurer, and Harry A. Harmon is secretary.

Oldtown.—E. A. Blanchard has the contract for installing a hot-water heating plant in the residence of O. H. Taylor at Topsfield, and has a gang of men at work on the job.

NEWS FROM WISCONSIN.

Milwaukee.

Plans are under way for the erection of another public-comfort station. The budget contains an appropriation of $25,000 for comfort-stations and it is intended to expend most of this on a station which will be built on the Grand avenue bridge in the heart of the downtown section. According to Ald. Martin Mikkelson, who has introduced a resolution in the common council providing that work be started on the structure at once, the station will be one of the most modern of its kind in the United States. A small comfort-station was erected on the Fifth street viaduct some time ago, as described in the Public-Comfort Station Number of "Domestic Engineering."

City Engineer Joseph A. Mesiroff is urging an appropriation for large and comprehensive addition to the city's present waterworks system, to cost at least $600,000. The plan now under consideration calls for a new intake to cost $500,000 and a 46-in. main to cost $100,000. It is claimed that the addition will take care of the city's water needs for the next fifty years.

Elsewhere in the State.

Rhinelander, Wis.—R. G. Lowell, formerly of the firm of Lowell & Bross, has re-engaged in business, having purchased the plumbing and heating establishment of Adams & Sullivan.

Beaver Dam, Wis.—Leo M. Neuman, for sixteen years in the employ of J. J. Neuman, has opened a shop of his own at 313 South Spring St.

Chippewa Falls, Wis.—The board of public works has recommended the erection of a modern central heating plant in that city. Work on the plant will start early in the spring.

Bayfield, Wis.—J. C. Mundt has opened a new plumbing shop.

Sheboygan, Wis.—Zurheide & Wunderlich have opened a plumbing, heating and gas-fitting shop at Michigan avenue and North Fifteenth street. Both men have had considerable experience in the field, and success is predicted for the new firm. More plumbing work was carried on in this city last year than during any previous time in its history, more than $80,000 having been expended along this line, according to John Meyer, business agent for the building trades' council.

Fond du Lac, Wis.—The contract for furnishing and installing a new steam-heating plant in the Lincoln school has been awarded to the David Adhearn & Son Co. at $2,537.

Fond du Lac, Wis.—The Sanitary Plumbing Co. has been organized by F. O. Funkey, Elizabeth Funkey and J. A. Harlin, with a capital stock of $5,000, to engage in a general plumbing business.

NEWS FROM THE PACIFIC COAST.

San Francisco.

The local situation in the plumbing, heating and ventilating trades is showing a slight improvement this week, and the important announcement of the World's Fair directors last week that the plans for locating the various Exposition buildings had been officially completed, stirred up a great amount of good feeling in business circles. The Fair directors have announced that all the temporary structures will be located at the Harbor View site, the permanent buildings at Lincoln Park, Golden Gate Park and the Civic Center. The sum of one million dollars has been promised for a monster auditorium, the city to provide the site, and other adequate sums will be appropriated by the directors for a permanent museum, art gallery, aquarium, etc. This announcement means that the work of grading, tunneling and filling in can be commenced without further delay. Another public building of importance to be erected in this vicinity is the big auditorium of Oakland, a half-million-dollar building, the plans for which will be completed within a month by the municipal architect, J. J. Donovan. Furthermore, Architects O'Brien & Werner, of San Francisco, are engaged on the plans for a theater building to cost $500,000, to be erected here on the old site of the Tivoli Theater. With the Exposition work started and the numerous private buildings commenced, the spring season will open up with exceptional activity.

The Mechanical Installation Co., whose offices are in the New Zealand building, is moving into a handsome new building at 179-189 Second St. This building was erected by the company for its exclusive use and the firm will be completely installed in the new quarters by the end of next week, it is expected. The Mechanical Installation Co. is an engineering concern specializing on fire protection contracts, heating, mechanical devices, vacuum cleaning systems, electrical equipment, etc. It also carries a large stock of steam pipe. Since opening for business here three years ago this company has prospered under careful management and progressive, up-to-date methods until the business has expanded to its present proportions, which demand the new building just completed. This building is of reinforced concrete and has two stories and basement. The basement is to be devoted to the pipe shop, the first floor to the machine shop, and the mezzanine floor to offices and the electrical repair department. The officers of the company are: Orlo Eastwood, president; M. A. Herriman, vice-president; Mr. Pratt, secretary and treasurer. Another director is Robert Sherman, a prominent capitalist of Los Angeles. John J. Pottinger, formerly connected with the industrial and power department of the Westinghouse Electric & Mfg. Co., is the sales manager, having joined the company about a month ago. One of the largest jobs at present with this concern is the installing of an automatic sprinkling system in the new building of the Deere Implement Co. on Brannon street.

H. L. Allison, special Western representative of the Standard Sanitary Mfg. Co., is on a month's visit to the cities of the Northwest in the interests of his company.

H. W. Finch, Pacific Coast manager for J. M. Kohler Sons Co., has just returned from a trip to Los Angeles and San Diego. Mr. Finch states that the announcement of his company on February 3d that hereafter it will not place any unguaranteed goods on the market, has been received with great appreciation by the Coast dealers in bath-room supplies. As the Kohler company not only guarantees all goods for an unrestricted period, according to the latest letter sent out to the trade, but also assumes the expense of installing replaced goods, contractors naturally feel a security which allows them considerable more latitude than formerly when figuring on new work.

S. Lovett has opened a plumbing shop at 1311 Ninth Ave., San Francisco.

Mangrum & Otter have been awarded the contract for the heating appliances for the three-story and basement building, owned by the S. & H. Lachman Estate, at Market and Fremont streets, for $3,700.

Announcement comes from Sacramento, Cal., that the Masonic Temple Association of that city will shortly begin the construction of a nine-story steel frame structure destined to be one of the finest lodge buildings on the Coast.

Elsewhere on the Coast.

Windsor, Cal.—A change has been made in the plumbing firm of Philpott & McCracken, and now the entire business is owned and conducted by J. F. Philpott.

Los Angeles, Cal.—Howe Bros. have just been awarded the contract for installing the plumbing and gas system in the Mary Clark Memorial Home at Los Angeles. Amount, $22,000.

Visalia, Cal.—A. H. Askin, of this town, is building a shop for a branch of his plumbing and sheet iron establishment at Lindsay, Cal.

Winterhaven, Cal.—An overhead irrigating system is being installed, as a test plant, in a large orange grove in the Porterville, Cal., citrus district. Water for sprayng the trees will be conducted through perforated galvanized iron pipes. If the system proves a success it will undoubtedly be largely used in the orange districts.

Sebastopol, Cal.—The members of the firm of The Weeks & Robinson Hardware Co. have dissolved partnership, and hereafter Mr. Robinson will continue the plumbing and sheet metal business for himself.

Los Angeles, Cal.—The Machinery & Electrical Co. has been awarded the contract for installing the heating apparatus in the Euclid Avenue Grammar School at Ontario, Cal., for the sum of $3,271. The Dederichs Hardware Co., of Ontario, will do the plumbing work on the same building for $4,287.

Los Angeles, Cal.—Blumve & Jay have been awarded the heating, plumbing and ventilating work on the eleven-story office and theater building on Broadway, between Seventh and Eighth streets, in this city, for $21,330. William Garland is the owner of the building.

Los Angeles.—Thos. Haverty & Co. have been awarded the contract to furnish and install the heating and ventilating system for the main room of the Title Insurance & Trust Co. and extensions of same to the mezzanine floor; also, heating and ventilating pipes to be extended over the Owl Drug Store in the building at Fifth and Spring streets. Amount, $3,660.

Los Angeles.—The Sanitary Specialty Mfg. Co., with a capital stock of $15,000, has just been incorporated. The directors are: J. Harvey Foster, Andrew H. Fisk and G. Posson.

Exeter, Cal.—Harry Titus has sold his plumbing business to Moss & Glascock, hardware dealers. The plumbing business will be conducted at the old stand on E street.

BUSINESS CHANGES.

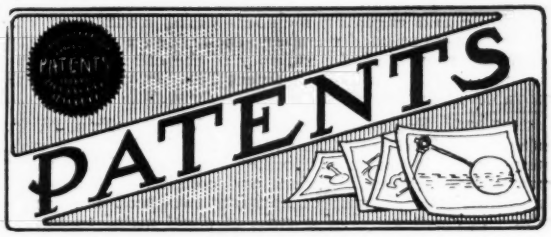
Rockdale, Tex.—Walter E. Suess, of the firm of Suess & Hardt, of Taylor, Tex. has established a plumber ship in Rockdale. His office and shop are in the building occupied by the Rockdale Water & Light Co.

Brookfield, Mo.—O. H. Hall, formerly of Kansas City, has recently moved to this city and will conduct a first-class plumbing establishment here.

Girard, Kans.—C. M. and Bert Larue have recently purchased a two-thirds interest in the plumbing establishment of H. E. Hertner, and will have charge of the business while Mr. Hertner is in Texas. The firm name now is H. E. Hertner & Co.

Macomb, Ill.—The firm of Welch & Anderson, which for several years has conducted a plumbing and heating business, has been dissolved and the establishment henceforth will be conducted by Mr. Welch, with the same competent force of workmen that has built up the firm's reputation for good work. Mr. Anderson has gone to Bloomington, where he will follow his profession.

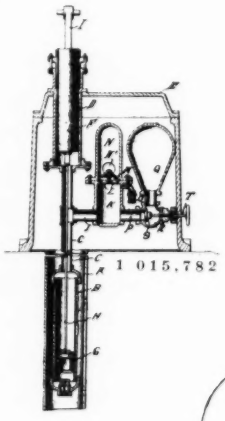
Wheeling, W. Va.—Architect E. B. Franzheim has designed a 23-room addition to the McLure hotel, but contracts will not be awarded until the heating plans are ready.



Plumbing Department.

1,015,782. Pumping Apparatus. Xenophon Caverno, Kewanee, Ill. In a water pumping apparatus, the combination with a pump, of an air admission chamber having a water inlet connected with the outlet of said pump, means for permitting the water level to drop in said chamber in the intervals between the water forcing strokes of the pump, an auxiliary air chamber connected with the intermediate chamber, and a valve controlling communication between said chambers, said intermediate chamber having an outlet located above its water inlet, and an automatically opening valve controlling said outlet.

1,015,833. Water-Heater. Dumitru Popa, Canton, Ohio. A water heater including a case forming a main chamber, a plurality of tubes in the main chamber communicating in series, the case having a side wall and a hollow cover with a flue chamber extending through the cover, a plurality of tubes in the flue chamber, the tubes in each lateral half of the flue chamber communicating in series, a pipe leading into the cavity of the side wall, a communicating pipe between the cavities of the side wall and the cover, communicating pipes between the cavity of the cover and each lateral series of flue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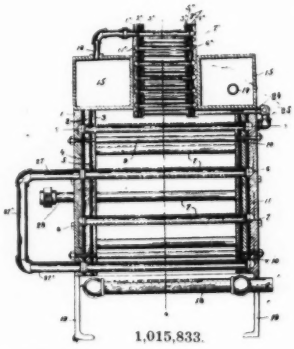
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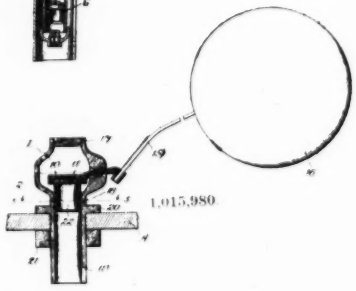
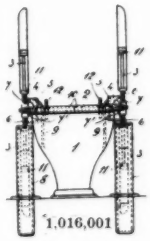
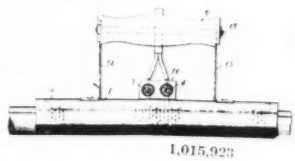

1,015,980.

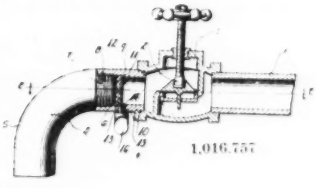

1,016,001.

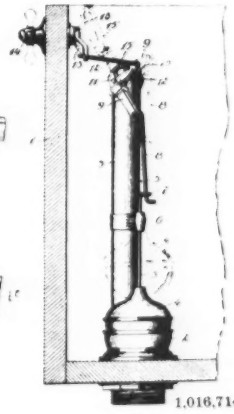
tubes, and communicating pipes leading from the flue tubes to the series of main tubes, the main tubes being substantially twice the diameter of the flue tubes.

1,015,980. Tank-Valve. Charles A. Robbins, Dixon, Ill. The combination of a valve casing having an inlet and an outlet, and comprising separately connected sections having portions of their contacting edges provided with registering recesses to form an opening from the interior of the casing to the outside thereof, and said contacting edges having registering recesses extending laterally from the first-mentioned recesses; and a valve member having a stem passing through the aforesaid opening, said stem being provided with trunnions which are mounted in the laterally extending recesses, and said valve member having a valve piece within the casing to engage the seat.

1,016,001. Closet. Walter Eichelkraut, Zehlendorf, near Berlin, Germany. In combination with a closet basin, a horizontal rotatable shaft, a plurality of divided seats, arms at each end of said shaft, said arms rotatably carrying the respective portions of said seats, means for normally maintaining said seat portions in vertical position and whereby said seat portions may be successively moved into horizontal position so as to rest on said basin, and a chamber at each side of said basin through which said seat portions are adapted to be moved when in vertical position, said chambers containing an antiseptic liquid.


1,015,923.


1,016,757.


1,016,714.

1,015,923. Electric Heater for Pipe-Thawing. Theodore Abtmeyer, Wilkinsburg, Pa., assignor to Westinghouse Electric & Mfg. Co., a corporation of Pennsylvania. A pipe-thawing heater comprising two approximately semi-cylindrical concentric metal shells, an insulated resistance element disposed between said shells and having laterally projecting terminals approximately midway of the ends of the shells and a handle secured to the outer shell.

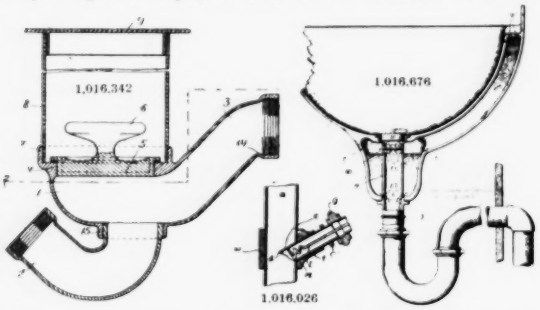
1,016,714. Flushing-Valve-Operating Mechanism. William H. Schulte, Trenton, N. J. In an apparatus of the character described, a tank, an outlet, a valve therefor, an overflow pipe, means for operating the valve comprising an operating member mounted on the tank, a lever arm at one side of said overflow pipe, said lever arm having a crooked extension at its rear end partially embracing said pipe, a pivotal connection for said arm engaging said arm on one side of said pipe and the crooked extension on the other side of said pipe, a second arm mounted on the first mentioned arm at an angle thereto and adjustable toward and from the pivoted portion thereof, means whereby the first mentioned arm may be connected to a valve, and means whereby the second mentioned arm may be connected to said operating device.

1,016,757. Faucet-Filter. Luther A. Mason, Ellensburg, Wash. In a faucet filter, including a valve, the combination with a filtering chamber on the outlet side of said valve and a filter in said chamber, said chamber having a single opening in its lower wall, said opening communicating both with the filtering chamber and the filter, and a plug detachably secured in said opening, said plug having its inner end concaved to register with the edge of the filter.

1,016,342. Bath-Trap. Peter F. Lyons, Boston, Mass., assignor of one-half to C. H. Cronin, Boston, Mass. A bath-trap comprising a generally circular or bowl-shaped shallow body having an outlet pipe at one side, the diameter of which is substantially as great as the depth of the body, and an inlet pipe curved to form a downward sealing loop connected to the bottom wall of the trap between the outlet and the center thereof, whereby the parts of the trap more remote from the inlet are enabled to form a reservoir withholding a quantity of water sufficient to refill the sealing loop when the latter is emptied by siphonage, without requiring valve means.

1,016,676. Primer for Sewer-Seals. Albert C. Dale, Longbeach, Cal., assignor of one-half to E. H. Barmore, Los Angeles, Cal. The combination of a plumbing fixture provided with an outlet, a sewer connection including a seal, a chamber below the said outlet and above the said seal, means for conducting into said chamber all of the outflow through said outlet, said chamber having restricted communication at its lower portion, with said seal, so that the chamber will be charged with water from the outlet of said fixture and said water will gradually drain into the seal to prime the same.

1,016,026. Pipe-Tapping Means. Charles W. Metcalf, San Diego, Cal. A device of the character described, comprising a clamp provided with a threaded hole and

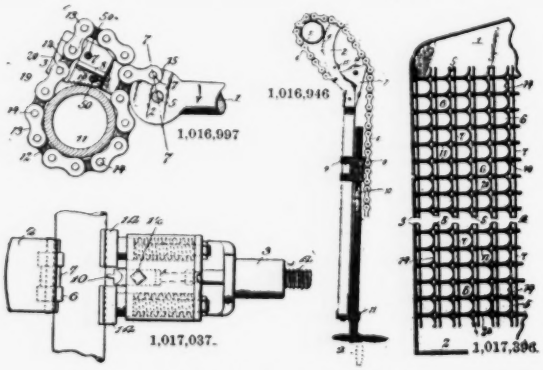


adapted to be placed around a main pipe, a relief pipe provided with a cutting end threaded to correspond with the threaded hole in said clamp and adapted to be screwed into said threaded hole and thence through the wall of said main pipe, and a valve means for regulating the flow of liquid from said main pipe through the opening therein, all substantially as set forth.

Heating Department.

1,016,997. Pipe-Wrench. William Andrew Hyle, Buffalo, N. Y., assignor to Peter E. Macdonald, Toronto, Canada. A pipe wrench comprising a jaw composed of two side bars or cheeks which have their rear ends separated while their front ends are provided with complementary interlocking faces, a handle to which the rear ends of said bars are pivoted, and a chain connected at one end with said handle and adapted to be connected with said jaw.

1,016,946. Combination Pipe-Wrench and Pipe Cutter. Clerewood Le Clere Lyons, Willows, Cal. A tool as described comprising a handle having a jaw adapted to receive a pipe, a cutting blade in said jaw, a chain secured in said handle member and adapted to extend

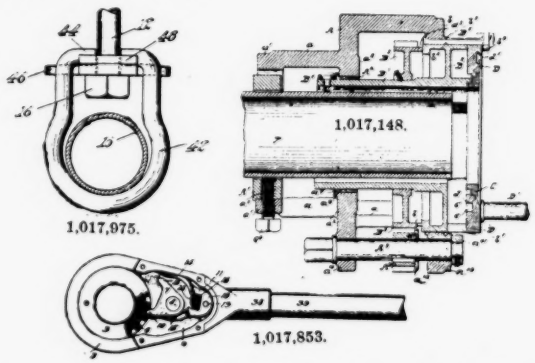


around said pipe and said jaw, means for securing said chain in fixed position, a protecting blade adapted to be disposed between said chain and said pipe, said blade having a hook adapted to project through one of the links of said chain as described.

1,017,037. Pipe-Cutting Tool. Bradford Borden, Toronto Ontario, Canada, assignor to The Borden Co., Warren, O., a corporation of Ohio. A hand-operated pipe-cutting tool comprising a fixed member and a movable member, a cutting knife, two pipe engaging members arranged in different planes with the knife located between them, said knife and engaging members being mounted in one of the first-mentioned members, each pipe engaging member being movable independently of the other, and means for effecting a relative movement between the fixed and movable members.

1,017,396. Radiator. John M. Fedders, Buffalo, N. Y., assignor to Theodore C. Fedders, Buffalo, N. Y. A radiator comprising inlet and outlet headers, and a core arranged between said headers and consisting of a plurality of units, each unit comprising two sections, one of which is constructed of a strip of sheet metal to form a plurality of flat webs and a plurality of transverse locking beads arranged at intervals on said strip and the other section being constructed of a strip of sheet metal to form a plurality of transverse plaits each of which engages at its crown with the concave side of one of the beads in the other section and a plurality of curved webs each of which connects the opposing plies of two adjacent plaits and is arranged with its convex side opposite a flat web of the other section.

1,017,975. Pipe-Hanger. Percy N. Kenway, Newton, Mass., assignor to Charles E. Riley, Newton, Mass. A hanger for use with a lag screw or the like, comprising a yoke constructed and arranged to be supported by a lag screw, said yoke having inclosing portions and a groove in its upper surface, together with a member for encircling a pipe, said member being constructed of a continuous integral piece of heavy wire and having oppositely disposed ends of the same cross section as the body portion thereof adapted to engage in said groove and being prevented from spreading by the inclosing portions of said yoke.



1,017,148. Device for Cutting Screw-Threads. Louis F. Hart, Cleveland, O., assignor to The Hart Manufacturing Co., Cleveland, O., a corporation of Ohio. The combination of work-holding means; a die-holding member, said means and member being longitudinally and rotatably movable with reference to each other; dies movable in said member; a plate rotatably secured to said member, said plate engaging said dies and being adapted upon rotation to position the same in said member, the die-engaging elements of said plate being so arranged and constructed that the outward pressure of the dies is effective to rotate said plate in a predetermined direction; and means adapted to control the rotation thus had, the operation of said means being effective upon the longitudinal movement of said member.

1,017,853. Pipe-Threading Tool. Clarence S. Cochran, Denver, Colo., assignor to The Octagon Die & Tool Co., Denver, Colo., a corporation of Colorado. In combination, a stock carrying a revoluble toothed tool-holder and having a recess at one side of said holder, a double pawl pivotally mounted in said recess, a double spring in said recess, the two portions of said spring being respectively adapted to engage either side of said pawl and the opposite side of said recess, and means for shifting said spring.

Lima.—Plans, specifications and estimates of the cost for a water-purification plan and a sewage-disposal plant have been made by City Engineer Guy Crayton. It is believed that the city will construct both plants the coming summer.